Notes from the Hosmers

Highways for Animals *By Chip Knight, National Wildlife Federation, Montpelier*

Situated in the middle of northern Vermont's high undulating Piedmont, the Craftsbury area features an idyllic natural landscape valued for recreational and agricultural reasons. But how friendly is the region for wildlife? Recently, a group of local residents gathered to explore that question during a walk along the northeastern edge of Little Hosmer Pond with Jens Hilke of the Vermont Fish and Wildlife Department. Setting off from Judy Davis's house, we searched for tracks, scat, and other signs of a wildlife movement from the Black River and Hosmer wetlands to the uplands of the Northeast Kingdom.

The afternoon event was hosted as part of Staying Connected, a bi-national, four-state partnership working to protect a regionally significant wildlife network across the northern Appalachians, from the Tug Hill Plateau in western New York, across the Adirondacks and the Green and White Mountains, to the forests of northern Maine and eastern Quebec.

2010 Summer Events—See Back Page

Organizations such as National Wildlife Federation, The Nature Conservancy, Wildlands Network, and Vermont Land Trust have teamed up with state and federal agencies, municipalities, and local citizens to address the regional issue through work at the local scale. The initiative is primarily focused on enhancing the connecting landscape, i.e, corridors, between large blocks of habitat for wide-ranging mammals such as black bear, moose, bobcat and fisher. Six key linkage areas have been identified across the region, four in Vermont, and linkage coordinators have been hired to provide outreach to communities and local organizations. These individuals are

(Continued on page 3)

From "GREEN MOUNTAIN FARM," *by Elliott Merrick*, referring to Little Hosmer

When I have been away from home and returned and know that I can stay and savor things, I always go and get acquainted with the lake again. One must have time, time to dream and look down through the water if one is to know even so small a lake as this. Lying there against its shores of rock or field, it is so varied in color and mood it almost seems to have a personality and life of its own. It is blue on summer mornings and gray when mist is falling. It sleeps and glares on sizzling summer noons, and then again gnashes its teeth with suds and streaks of foam. Stars mirror themselves and wriggle in the passing canoe wake. In the fall it is cold and black and glassy, with curled leaf boats sailing sadly here and there, not going anywhere much.

We have our special places, of course: the bank on the far shore where a cold spring runs in just above the lake surface; the low shores where grizzled ageless cedars lean over so far you can sit on their trunks and dip your toes; the cliffs where birches and firs stand at the edge; the reed grass swamp at the far end where wild ducks make their nests; the lily pads that are the frogs' special province; the gray rock ledge points; the willow shores; and the place where our pasture grass runs green to the very water. The lily pad patches are special, where the old bullfrogs sleep and open their eyes and blink. It is wonderful fun to sneak up on them and catch them in our hands; even more fun to let them go and see them streaking down through the water, the great legs kicking and gliding, kicking and gliding. Three brooks run in at various places, each of them totally different in its way, and there is one "secret" cove that doubles back inside the shore and runs into the shadowy woods in a way that always surprises and fascinates us so that we have to follow it, speaking in whispers, and then we sometimes smack the water with a paddle and shout. The bottom has its variations, with shallows, deep holes and rock ledges that wind here and there. In the night when you suddenly touch one of those underwater ledges with a paddle blade, you feel as though a monster is rising under you and you get a sense of vertical dizziness that is quite different from the horizontal kind. The two islands are, of course, special kingdoms of their own. On one is a fireplace spot and a diving rock. The other is long, and thick with brush, where, under a cliff, in a subsurface cave, the muskrats live.

("Green Mountain Farm" can be ordered at Stardust Books and Galaxy Bookshop)

Vermont Land Trust
30 YEARS OF LAND CONSERVATION | 1977-2007

The Craftsbury Outdoor Center Begins Partnering with the Hosmer Ponds Watershed Initiative

The Hosmer Ponds Watershed Initiative is an informal group of Craftsbury and Albany residents who want to increase our appreciation and understanding of this special place through outings, workshops, and gatherings. We hope to engage community members to think about long-term conservation goals for the region and the tools available to reach such conservation goals. Some of the tools available range from personal education and individual land stewardship to larger neighbor-to-neighbor projects and conservation easements.

This effort began in 2007, supported by Vermont Land Trust through a small grant from the Vermont Community Foundation. After four years, Vermont Land Trust continues to be a partner but we've been working to broaden our local support and focus. Starting with this season's events and newsletter, you'll be noticing new partners involved in the planning of events and in covering the cost of the newsletter. We have joined forces with the Craftsbury Outdoor Center and its Green Racing Project to produce this newsletter and a new monthly calendar of events. The Outdoor Center is also serving as host and sponsor for a number of great events. We are partnering with the Fairbanks Museum on a special Bear Night with Ben Kilham. And in the past we've partnered with the Craftsbury Conservation Commission and Craftsbury Historical Society on events and plan to continue those collaborations.

We are looking forward to including others who would like to help shape and support this effort – with their time, financial support, or other expertise. Please let us know if you'd like to get involved! Please come to share and learn together. If you have ideas for future programs or input on this newsletter, please contact Eric Hanson, 586-8064 or others who have helped organize this year's events.

If you are interested in land conservation options and tools in particular, contact Tracy Zschau of VLT: 748-6089 or tracy@vlt.org or any of the local members who organize events above. There is money available to help cover the legal cost of setting up donated conservation easements.

The Hosmer Ponds Watershed Initiative

Judy Davis
Judy Geer
Eric Hanson
Chelsea Little
Nancy Moran
Diane Morgan
Steve Wright

Flyfishing Made Easy

So you want to learn how to flyfish? You can take out a second mortgage on your house and go to the Orvis store in Manchester and spend it all on lessons and equipment. OR you could come to the Introduction To Flycasting workshop by Steve Wright on July 3 at 2 pm at the Little Hosmer boat access and get a free lesson toward becoming a competent flyfisher. Steve is about the best teacher you'll find in Craftsbury or maybe the whole state of Vermont. He was born in rural Georgia with a fly rod in his hand and has been fishing ever since between stints as president of Sterling College and Commissioner of Fish and Wildlife.


NANCY MORAN

The basic point here is that there is no "easy" way to learn how to flyfish, just like there's no "easy" way to learn how to ride a bike or saddle a horse or swim. You just have to jump in and do it.

Some of you may be hunters. When you began that activity one of the first things you had to learn was how to shoot—yes, other stuff too—but the first thing was learning how to shoot. Flyfishing is similar. You first MUST learn how to cast the fly: how to get it out on the water in front of a fish.

The first step in launching your flyfishing career should be getting familiar with the equipment including an introduction into how to use some of the array of stuff you need. But, we'll keep it as simple as possible. Four things are necessary to begin: rod, reel, line and leader. Forget the fly. You don't need a fly to learn how to cast a fly. Yeah, that sounds weird but it's a fact. Trust me.

Those of you who have fished are probably familiar with so-called spinfishing. It's the most popular sort of fishing in the whole U.S. of A. mostly because it really is "easy" to learn and it's relatively cheap—no mortgages needed. The biggest difference between spincasting and flycasting is that in the former it's the weight of the lure and the flexing of the rod that gets the lure into the water and in front of a fish. With fly-casting it's the weight of the line and flexing of the rod that gets the fly into the water. That requires much more subtle timing and therefore, practice. Remember what Ted Williams said about the secret to becoming a major league baseball player. Three things were needed, "Practice, practice, practice. That's the secret to flycasting—and maybe life itself.

If you come to the workshop on July 3 we will help you take the first step toward life as a flyfisher. Steve may even tell you where to find the big fish. ***

(Continued from page 1)

charged with raising awareness about wildlife issues and connecting interested groups with specific partners who can provide sustained technical assistance on a wide range of complimentary issues.

Functioning corridors are important to provide connections between core habitats, and to safeguard wildlife from habitat fragmentation and climate change. Just as roads carry us to the grocery store and trails lead us through the woods, wildlife rely on viable pathways to meet their needs. In fact, **animals depend on this network of connections to move across multiple time scales:**

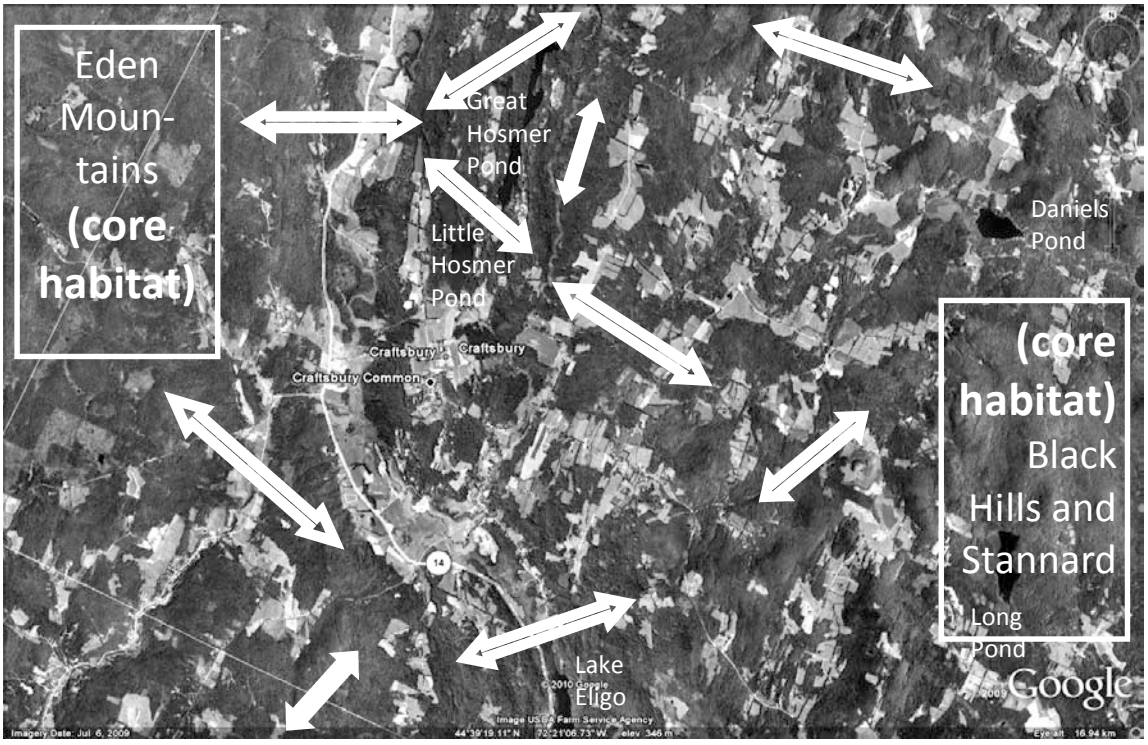
1) **daily to search for sources of food and water,**
2) **seasonally to adjust to shifts in weather and to look for mates, and**
3) **generationally to allow for dispersal and to guard against genetic isolation.**

In much of the region, probable wildlife pathways have been computer modeled and mapped based on forest cover. Interestingly, the model appears to break down in Craftsbury, showing that wildlife are more likely to travel north through Albany and south through Woodbury and Walden. However, recent aerial photographs and tracking data taken along Route 14 have indicated a potential corridor through the Hosmer Pond area. Further local insight has also revealed that the myriad of fallow fields in the region may have contributed to the hole in the model. All of that combined to pique our curiosity for a local, on-the-ground investigation.

During our walk, we observed two general features favorable for wildlife: ample forest cover and a powerline that can function to ease uphill movement. Diverse signs of plant and animal species were also evident in abundance: browsed elderberry and moose maple; white cedars that thrive in the locally sweet, calcareous soils; the elongated holes of pileated woodpeckers and the small drill holes of yellow-bellied sap suckers. In addition, we saw tracks and scat from moose, deer, coyote, fox, mink, and porcupine**. It was enlightening to learn that there is local connectivity for regionally significant species, and that part of the Staying Connected network runs right through the heart of Craftsbury.**

Afterward, many of the group expressed a strong desire to spread the word locally and to draw more people to upcoming events. Among the ideas raised were: hosting more landowner events to discuss management for wildlife and conservation easements; inviting someone to make a presentation about the cultural and landscape history of the local area; and the potential for an ongoing citizen-science monitoring project either around the Hosmers and/or at the wildlife road crossing nearby on Route 14.

If you have questions about Staying Connected, or would like to participate in an upcoming event, please contact Chip Knight at knight@nwf.org or (802) 552-4331. ***



Possible Animal Corridors through the Craftsbury Region Connecting Larger Core Habitat Areas. *To maintain healthy populations, large animals need highways or corridors to move from one large forested area to another. Some animals usually avoid crossing fields, lawns, and near houses; others are more tolerant. Our individual choices in land use collectively can have major impact on the future of our large mammals in Vermont. The absence or major reductions in large mammal populations in the late 1800s and early 1900s was a result, in part, to the clearing of the land.*

The Effects of Developed Lakeshores on Littoral Biotope (habitat)

By Kellie Merrell, Eric A. Howe, and Susan Warren (VT Department of Environmental Conservation) (edited by Eric Hanson)

Why study lake shorelines?
The littoral zone is the area of a lake where light penetrates to the bottom, usually in the near-shore shallow water environment. These shallow waters function as a nursery ground for a variety of species and as primary habitat for aquatic plants. It serves as a critical interface between the aquatic and terrestrial environment for the transport of nutrients, sediment, woody substrate, organic matter, and species that utilize both lake and land.

Since the mid-1980s there has been substantial shoreline redevelopment on lakes. The transformation of lakeshores from their natural forested and wetland cover to newly developed lawn and sandy beaches, and the conversion of summer cottages to residential homes is a stressor to littoral zones in lakes. In the early 1990s, the US Environmental Protection Agency and US Fish and Wildlife Service concluded from a study of 345 Northeast lakes that **the stress from shoreline alteration was a more widespread problem than eutrophication and acidification**.

In Vermont, removal of the vegetated lakeshore buffer is not prohibited by state law; and approximately 9% of the towns have shoreland vegetation protection in their zoning laws. The University of Vermont's Spatial Analysis Laboratory mapped shorelines within 25 feet of the waters' edge for 74 lakes in the Northern Forest of Vermont. The results indicated that, as of 2003, lakeshore development had impacted the vegetated buffer on up to 74% of a lake's shoreline. From 2005-2008, the Vermont Department of Environmental Conservation conducted a study to measure what, if any, effects unbuffered development has on littoral aquatic habitat.

What do we mean by "littoral biotope"?
Biotope can be defined as the sum of the physical, chemical, and biological components present in an area providing a living space for a distinct, recurring community of species. Literally translated, biotope means the area where life lives. Hence, to avoid confusion, we will use "biotope", a term used as a synonym for "habitat" in this article.

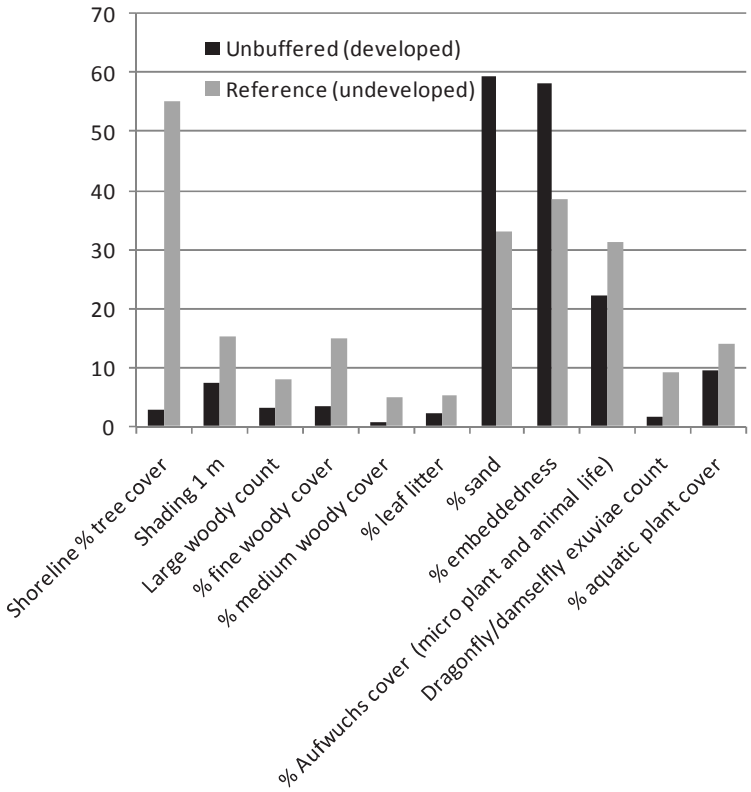
What we surveyed in Vermont lakes and ponds
In this study, we compared littoral biotopes subjected to little or no anthropogenic shoreline alterations to unbuffered developed lakeshore sites. The undeveloped sites were considered high quality and are referred to as reference sites. Our study contains results from surveys conducted on 40 lakes across Vermont. We divided the lakes by trophic class (oligotrophic, mesotrophic, and dystrophic) and size (< and >200 acres). We avoided artificial lakes and lakes with significant drawdowns. We attempted to pair every developed site with a reference site. At each site we placed a 10 m floating transect at the 0.5 m depth contour and ran it parallel to the shore. Snorkelers estimated the percent cover of a number of physical and biological parameters within plots along the transect.

There are many important physical properties that control what life exists in the littoral zone. The physical factors we measured are listed in the table and chart. We also measured several biological components of the littoral biotope. Aufwuchs is the term that describes the community of small plants and animals that form biofilms on rocks, woody substrate, and aquatic plants. Aufwuchs is an important food base for fish and macroinvertebrates. Dragonflies and damselflies are another important biological component, as they feed on aufwuchs, and become prey for fish and other vertebrates. We collected all dragonfly and damselfly exuviae (skins left behind) from along the 10 m shoreline transect and 2 m inland at each site.

Is there an observed biotope change at unbuffered, developed sites?
The differences in all of the biotope components between the reference (undeveloped) sites and unbuffered developed sites were substantial. There was 182% less shoreline tree cover at unbuffered developed sites. This factor explains the majority of the observed differences for all of the other parameters evaluated in this study. There was 71% less shading of the water which means warmer water temperatures and more exposure to predation from

Differences in Biotope Measures in Littoral Zones (at 1 meter depth) along Developed and Undeveloped Shorelines

Biotopes Variable	Unbuffered (Developed)	Reference (Undeveloped)
Shoreline % tree cover	**2.7**	**55**
Shading 1 m	7.2	15.1
Large woody count	3.1	8.1
% fine woody cover	**3.5**	**14.9**
% medium woody cover	0.6	5.0
% leaf litter	2.3	5.3
% sand	59.4	32.9
% embeddedness	58.0	38.4
% Aufwuchs cover (micro plant and animal life)	22.2	31.2
Dragonfly/damselfly exuviae count	**1.6**	**9.1**
% aquatic plant cover	9.5	14.1



visual avian and terrestrial predators. There was 90% less large woody structure, 159% less medium woody structure, and 124% less fine woody structure in the littoral zone at unbuffered developed sites. This reduction means there is less cover for fish and less vertical substrate available for amphibians and fish to attach their eggs to so they will remain well oxygenated above the lake bottom. Less large woody structure also means fewer basking sites for turtles that are safe from terrestrial predators (basking helps reptiles regulate their body temperature and save energy for reproduction). Fine woody structure is important to macroinvertebrates; it serves as cover from predation, material from which caddisflies make their casings, and substrate for microorganisms that form the foundation of the food chain. There was 80% less deciduous leaf litter in the shallow littoral zone of unbuffered developed sites, further reducing the available substrate for macroinvertebrates and microorganisms. The sediment structure was altered off of unbuffered developed sites as well, with the addition of 57% more sand and 41% more sediment embeddedness of rocks and woody material.

The differences in the biological components measured were also striking. There was, on average, a 34% reduction in aufwuchs at the unbuffered developed sites compared to the reference sites, meaning less food is available for fish, snails and macroinvertebrates. There were 139% fewer odonate exuviae skins at unbuffered developed sites. This represents an additional reduction in prey for fish and a reduction in the number of emerging dragonflies and damselflies into the terrestrial ecosystem.

In summary, conversion of treed shorelines to lawn may seem harmless to humans, but the chemical, physical, and biological components of the littoral biotope are radically changed by this activity. The natural community of aquatic and terrestrial organisms that has evolved to grow, reproduce, and survive there will change or disappear as the biotope undergoes the transformation to something with substantially diminished habitat quality. Minimizing the extent of shoreline conversion from forested land to lawns within the buffer zone and maximizing the extent of naturally buffered shores will help ensure that the natural community of lacustrine species endures. ***

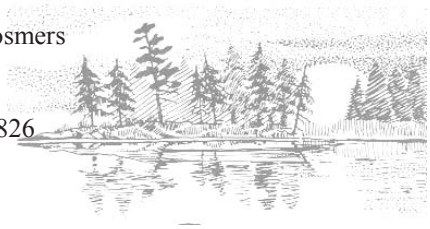
Black Bear Facts

by Chelsea Little, Craftsbury

- Bears' sense of smell is their most developed sensory ability – they can pick up the smell of another bear a mile away. The scent trails that they leave can tell information about age and gender, and would be recognizable if the two bears had previously met.[1]
- Bears are not true hibernators! Although their respiration and metabolic rate sharply decrease during winter sleep, their body temperatures stay the same – meaning they can "wake up" in moments, unlike a true hibernator.[1]
- There are 15 different basic forms of bear vocalizations, from a "chuckle" of contentment to an "irritated moan" to a nervous "gulp".[1]
- Ritualized play is an important form of social bonding for young bears, and teaches them how to interact as adults without hurting each other when the stakes are not high. Playing together builds trust between bears.[1]
- There are approximately 3,000 to 3,500 black bears in Vermont – the largest their population has been in the last 200 years.[2]
- Female black bear ranges are 1 to 50 square miles. Males travel much further: their ranges are 10 to 290 square miles, and may include several female ranges.[2]
- Multiple bears often use the same food source - a beech stand might have ten different bears feeding on it, but all coming at different hours of the day and night to minimize overlap, depending on their status in the hierarchy.[1]
- *The biggest threat to our black bear populations is habitat fragmentation – we need to preserve our large blocks of forest!* [2]

1 Kilham, Ben, with Ed Gray. *Among the Bears*. Holt Paperbacks, 2003.
2 Vermont Fish and Wildlife "Black Bear Fact Sheet"
3 Virginia Department of Game and Inland Fisheries "Black Bear Facts"

Notes From the Hosmers
c/o Eric Hanson
P.O. Box 22
Craftsbury, VT 05826



2010 Summer Events—Hosmer Ponds Watershed Initiative

How to Manage Your Woodland as Wildlife Habitat with Put Blodgett

- **Sunday, June 27th - 8 p.m.**
- **Location: Craftsbury Outdoor Center.**

Put Blodgett is the president of the Vermont Woodland Association. . Put says: "Many wildlife lovers don't realize that to have a diverse habitat for diverse species of wildlife, one has to harvest timber for openings, edge habitat, and early successional forests." Come learn how to turn your patch of woods into great wildlife habitat.

Introduction to Flycasting Workshop with Steve Wright

- **Saturday, July 3rd - 2 p.m.**
- **Location: Little Hosmer Pond boat access.**

Craftsbury resident and expert flycaster, Steve Wright, will guide us toward becoming a competent flyfisher. Steve will bring lots of extra gear, but bring your own if you have it.

Forests and Climate with Jad Daley

- **Wednesday, July 14th - 8 p.m.**
- **Location: Craftsbury Outdoor Center.**

Jad Daley of the Trust for Public Land and a Hardwick resident has helped conserve thousands of acres of forest and directed the Eastern Forest Partnership, a coalition of conservation groups from 22 states. He is an expert on the role of forests in fighting climate change, and a major advocate for community forests. This is a great way to think about how our forests here in Craftsbury might be helping the planet!

Black Bear Night with Ben Kilham

- **Sunday, August 1st - 8 p.m.**
- **Location: Craftsbury Outdoor Center.**

Self-trained biologist Ben Kilham through years of observation and mentoring orphaned bear cubs has become a leading expert on black bear behavior as well as the only licensed bear rehabilitator in the state of NH. Kilham has authored or appeared in articles in Audubon Magazine and Field and Stream among others; and wrote a book, *Among The Bears*. Ben's talks and slideshows are a real treat, so don't miss this special event and the opportunity to learn a lot about some of our most elusive large mammals! Co-sponsored by the Fairbanks Museum.

Hosmer Ponds Community Pizza Party

- **Wednesday, August 4th - 5 p.m.**
- **Location: Craftsbury Outdoor Center**

Anyone who lives around the Hosmers or just appreciates the area is invited to come to a pizza party at the Craftsbury Outdoor Center. We'll be baking in our outdoor clay bread oven - dough and toppings will be provided, but please bring some of your own favorite toppings, too! We are looking forward to having a good community get-together !

Wildlife Night – Community Sightings and Stories

- **Fall/Winter 2010 TBA**
- **Location: TBA**

Anytime we see a bear leap across the road, it gives us a quick adrenaline rush. Come and share your sightings, help us map the locations, and share a story or two. Not only will we start to see which parts of the region are used by the larger, roaming animals, we'll have fun hearing about how wildlife connects us to this great place we live and learn how we can help wildlife even more.

Sterling College Summer Events

Basic Bee Keeping and Care

Tuesday, June 29, 6 – 9pm, Sterling College - Simpson III

Expert bee keeper and author Keith Morris presents on basic bee keeping and care, using Sterling's two new hives. Wear appropriate clothing

Black River: Past, Present and Future

Thursday, July 15 - 7 pm, Sterling College - Simpson III

A presentation and discussion about the state of the Black River Watershed, it's history and culture. Open to the public.