Volume 6, Summer 2014

Swallow Tales

Hirundo Summer Newsletter

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Notes from the Board Chair

Stephanie Larouche

Hirundo Vision Statement (established March 2009):

Within five years, the Hirundo Wildlife Refuge will be recognized as an important regional asset for the study and enjoyment of nature, and for wild animal rehabilitation. Annual fundraising and an active volunteer recruitment program will help to support programs and educational outreach and collaborations with institutions of higher education, local schools, area organizations, indigenous peoples, and the general public.

Our organization has come a great distance toward achieving our vision. Described in the Bangor Daily News article in , April 11, 2012 as "a hidden jewel", Hirundo is hidden no more!

Four-season programming is broad-ranging and attractive, participation from the public, the University, public schools, and like-minded organizations has grown well, and we have an expanding cadre of dedicated volunteers with diverse talents.

The organization has also suffered loss. The wild animal rehabilitation program ended with the untimely demise of our devoted rehabilitator, trustee and friend Deborah Bryant.

We still have areas that require sustained focus to fully achieve. Along with efforts to attract foundation grants, we have initiated a business partnership campaign and are moving to become a membership organization. New revenues will ensure a bright future of exciting programming at Hirundo. Currently, energy is focused into expanding activities for species that need our help, and also in educational programs in the field of archaeology. Since people and their natural environment have been intertwined at Hirundo for eons, our interest is in both natural history and cultural history.

On behalf of the Board of Trustees, I extend gratitude to all those who contributed to this period of successful development, and a warm welcome to all!

Greg Innes — Summer Intern

Special points of interest:

- Seeking paddlers for Community Paddle and Cookout – call 944-9259 for more info
- Quarterly newsletter published spring, summer, fall and winter

I'm Greg Innes, Hirundo's intern and a Wildlife Ecology student at the University of Maine's Orono campus. Originally from Sydney Australia, I have now been living in Orono for three years. Hirundo's 2400 acres has extensive natural assets. Thanks to my time at Hirundo I now have a far greater understanding of the wildlife of the region and the US in general.

Nest box check summer 2014

How can anyone possibly decide on a favorite animal? My strongest interest may be in the aquatic environment, but from salamanders to dragonflies, to alewives and loons, my favorite label is constantly being reapplied. This summer has distracted me away from things aquatic (although I have managed a little vernal pool surveying and macroinvertebrate sampling) with the annual Tree Swallow (Tracycineta bicolor) nest box survey. My appreciation for the Tree Swallow has grown during the

Young swallow, ready for food.

see INTERN page 4

The adventures of Alex and Nick:

Who we are —My brother Nick, 11, and I, 14, have always been interested in wildlife. We love learning about the environment, how animals interact, and the ecosystem. We have been participated in many nature programs since we were young and have started volunteering in Acadia National Park and Hirundo Wildlife Refuge.

Freshwater Zooplankton Alex Baron

Zooplankton are microscopic animals that mostly drift in fresh water bodies, seas, or oceans. They are close to the bottom of the food chain. Most zooplankton feed on algae and phytoplankton (microscopic plants). For example, *Daphnia* and *Bosmina* are algae-eating zooplankton, while rotifers are predatory. Zooplankton population keeps the populations of algae and phytoplankton stable.


Daphnia


Rotifer

Many small animals, such as hydras, in the same family as jellyfish (*Cnidaria*), insect larvae, young fish, and tadpoles, depend on zooplankton as their main source of food.

The populations of zooplankton and phytoplankton play a key factor in determining the welfare of the environment. Zooplankton, such as daphnia and copepods, are indicator species. We found Daphnia when sampling Lac D'or at Hirundo Wildlife Refuge.

If a large influx of nutriment, such as that from fertilizer, drains into a pool in which the populations of zooplankton and phytoplankton are stable, the phytoplankton population would increase, due to a greater amount of nutrients available. Afterward, the zooplankton population would increase, due to more food available. The algae population would grow at a faster rate, and as it reaches its carrying capacity, the population soon crashes. The zooplankton population would already be increasing and consuming algae as well as oxygen at a much faster rate. As the population reaches its carrying capacity, the individuals run out of food and oxygen, then die. That area of the water body would become a "dead zone." The depletion of dissolved oxygen would make it impossible for aerobic organisms, which require oxygen for cellular respiration, to live. By observing the changes of the zooplankton population, scientists can make appropriate predictions regarding the aquatic environment, and issue proper administrations.

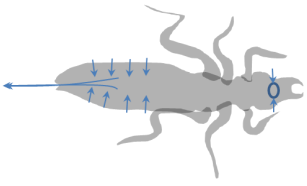
Daphnia & Rotifer by Center for Freshwater Biology, Department of Biological

Unique Adaptations of Insects Nick Baron

Both aquatic insects and terrestrial insects have amazing techniques in fighting their predators or catching their prey.

Aquatic insects are food for many vertebrates, e.g., fish, frogs, and birds. But some insects are large enough to even catch and feed on vertebrates. Others that aren't big and powerful enough have adaptations to stay alive. The water tiger, which develops into the predaceous diving beetle, have powerful jaws that can inject poison into its prey or a potential predator.

Dragonfly larvae have a special adaptation for a quick getaway. A gill chamber that can be filled with water and squirts water out quickly, a method called jet propulsion, propels the dragonfly larvae to safety. Both insects occupy their ecological niches in Lac D'or , Pushaw and Dead Streams.



Some terrestrial insects also have unique adaptations for survival. Chinese mantises (*Tenodera sinensis*), the largest native species of mantis (11 cm long) in North America though very rare in Maine, are capable of eating anything they can get their clawed forelegs on, including mice, fish, frogs, and hummingbirds. Maine's more common mantises (around 50 mm long) feed on bugs, caterpillars, moth etc. and are considered beneficial.


Photo by Eve Sweatman

Terrestrial herbivores have adapted unique defenses too. The bombardier beetle has two chemical compounds, hydroquinones and hydrogen peroxide, in two separate chambers. When threatened, the beetle contracts muscles that force the two chemicals into a mixing chamber where the hydrogen peroxide is broken down, releasing oxygen and hydrogen. The reaction is exothermic, with the temperature reaching to almost 100 C. The boiling, foul-smelling acid is sprayed through a valve, straight into the attacker's face. Yuck!


Photo by Dr. Tamsin Woolley-Barker

Recap & News

Have you hiked Hirundo's new trails?

Pushaw Stream Trail at Gate 3 now begins opposite of the Gift shop, thanks to the UMaine Alternative Break Volunteer Group. The group removed 50 feet of 12 foot fence and numerous trees for this new section of the trail. Nice job! We also would like to recognize Bucky Owen who envisioned the trail and directed the group.

Check out the trail at Gate 5. The trailhead is across the bridge (past Gate 3) on the left-hand side. Look for pink flagging tape. The Green Team of UMaine, Roger Merchant, Jason Flasher and Hirundo staff waded, pulled , flagged and cut, their way through the forest to create this winter and dry season trail. It now ends in several look-out points at a beaver flowage. The future plan is to continue the trail all the way to the bog, the Northern Unit of Caribou Bog.

The UMaine Service Group and members from the Maine Woodsman Team worked together to clear trails from fallen trees. We all were in awe of the chain saw wielding team members and the ease of walking the trails.

The Penobscot County Sheriff's Community Program members have been busy reviving the old garage. The group lifted the building, leveled the dirt floor and poured a cement pad. Thank you!

UMaine Alternative Break Volunteer Group

Green Team from UMaine Alternative

Members of Maine Woodmen's Team

University of Maine Service

International Student Group

The tree swallows were able to nest in clean boxes thanks to the International student s group lead by Karen Francoeur of Castine Kayaking.

Margo Boyd, one of the volunteers staffing Hirundo's table at the Cabin Fever Reliever

Many volunteers staffed the tables at the Cabin Fever Reliever show and the Hope Festival. Thank you all for being the public face of Hirundo.

Hirundo relies on investments of time and money donated by the local community. Thank you for your support. We could not do it without you!

We launched a **Business Partnership Campaign** this spring offering local businesses the opportunity to show their community support. We are very pleased to welcome and want to thank:

Patron

Old Town Rotary Club

Supporter

Cyr Bus Line, Old Town

Griffin & Jorden, LLC, Orono
La Bree's Bakery, Old Town
Noonan Chiropractic, Old Town
Owen J Folsom Sand and Gravel, Old Town
Rose Bike Shop, Orono

In-kind donation

A big thank you to Old Town Canoes for their generous in-kind donation upgrading our aging canoe fleet.

Please contact us if you would like to learn how your business can support the local community and local environment now and in the future.

We thank the following Businesses, Institutions & Organizations for their on-going support

Bodwell Center for Volunteers
Castine Kayak
Old Town Elementary School
Penobscot RiverKeepers
Stillwater Montessori
University Extension Service
University Maine
Wassokeag Learning Community

INTERN (continued)

survey as I have become aware of the challenges that this small bird (12-15cm) faces to survive. Some of Hirundo's Swallows may migrate from as far away as Central America. They have aerial and terrestrial predators including sharp-shinned hawks, snakes, raccoons, and chipmunks. They have fewer nesting resources in older trees, and face competition for nest sites with other birds, bees, wasps and even squirrels. The adult bird's metallic blue beauty and aerobatic displays only help to cement their place amongst my favorites.

During the survey, I saw many examples of obstacles to the bird's breeding success, including numerous instances of wasps cohabitating with the Swallows. Their presence certainly increased the speed of my survey at those boxes. One nesting attempt ended unexpectedly, when I saw a tilted nest box support pole surrounded by an area of flattened grass littered with feathers- indicating trouble. Lying on the grass was a nesting box with a scratched and torn roof. We decided that a very hungry bear was the most likely villain as nothing else besides a man with a screwdriver could cause that kind of damage. In other boxes, nestlings which I'd seen on the last check were now missing- before they were due to fledge- and I can only wonder what happened to them.

In 26 nesting boxes, over the 2014 spring and summer 110 Tree Swallow eggs laid for a total of 82 hatched nestlings, and 3 boxes had a later second nesting attempt. Also 5 chickadees were fledged from a nesting box next to Lac Dor. In comparison, during the 2013 season, 24 boxes were occupied with 93 total hatched nestlings. Data from our nesting survey is entered on the NestWatch website, http://nestwatch.org/. This nationwide monitoring program aims to track trends in the breeding bird population. Anyone with an interest in bird biology can participate, so check the website for ways to add to the growing database.

Our efforts to increase the breeding success of Tree Swallows at Hirundo are ongoing. We will be installing redesigned nesting boxes over the coming weeks, and will also prepare all the boxes for the 2015 season. So when the migrating Tree Swallows return to Hirundo next summer they will discover more nesting opportunities and the chance to maintain a strong population in the face of numerous challenges and a rapidly changing environment. If you would like to become a volunteer this fall to help give these beautiful birds a chance please call 207-394-2171.

Upcoming Programs

Rory Saunders and Steve Coghlan electrofishing Pushaw Stream.

PROGRAM	DATE	TIME	PRESENTER	LOCATION
Eavesdropping on local bats	8.15.2014	7:00 PM	Katelin Craven	HWR Gate 1
FAMILY DAY	8.17.13	10AM—4 PM	YOU	HWR Gate 1
Guided Afternoon Paddle	8.24.2014	2:00 PM	Greg Innes	HWR Gate 3
Guided Afternoon Paddle -Aquatic Insect Safari by Canoe	8.31.2014	2:00 PM	Greg Innes	HWR Gate 3
Visit our table at Orono Festival Day	9.6.2014	9:00 AM— 4 PM	HWR Staff & Volunteers	Down Town Orono
Grandparent's Day Paddle	9.7.2014	2:00 PM	Gudrun Keszöcze	HWR Gate 3
Last Full-moon Supermoon Paddle of the Year!	9.7.2014	6:00 PM	Gudrun Keszöcze	HWR Gate 3
Leggy, misunderstood beings: Spiders	9.14.2014	1:00 PM	Donne Sinderson	HWR Gate 1
Guided Afternoon Paddle	9.14.2014	2:00 PM	Hirundo Staff	HWR Gate 3
Guided Afternoon Paddle in celebration of Autumn Equinox	9.21.2014	2:00 PM	Hirundo Staff	HWR Gate 3
Great Maine Outdoor Weekend—Paddle & Walk	9.27.2014	9 AM—2:30 PM	Greg Innes	HWR Gate 3
Great Maine Outdoor Weekend—Turtles in Maine followed by Guided Afternoon Paddle: Looking for turtles	9.28.2014	1:00—2:00 PM 2:30—4: PM	Jean Adamson Gudrun Keszöcze	HWR Gate 1 HWR Gate 3

Question of the Quarter:

What is the name of the brilliant scarlet flowers growing on the shores of Pushaw and Dead Streams?

Send your answer by September 1, 2014
to either
- web@hirundomaine.org
- Hirundo Wildlife Refuge
  P.O. Box 266, Orono, ME 04473

Winner will receive a Senior Hopper Birdfeeder.

Bangor Daily News—Outdoors

Aislinn Sarnacki wrote an article about her FrogWatch USA training at Hirundo Wildlife Refuge published on April 30, 2014. Thank you Aislinn, for the publicity and your on-going support.

We also want to thank Nok-Noi Ricker for her article on July 11, 2014 promoting the Refuge as a place for Supermoon celebration.

Looking at land disturbances during "Reading the Landscape "with Larry Beauregard.

We are looking for volunteers to join our committees or lend a hand.

Program Committee

♦ Publicity ♦ Newsletter ♦ Brochures ♦ Website

♦ Lead walks, present a program ♦ Photography

Development Committee

♦ Fundraising ♦ Grant writing ♦ Data entry

Stewardship and Trails Committee

♦ Trail maintenance ♦ Fauna & Flora inventories

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Gloria Vollmers, Treasurer

YOUR SUPPORT

Hirundo Wildlife Refuge is a private, non-profit organization that depends on public donations and volunteers to run our programs.

We receive our funding from grants and donations for the preservation of wildlife and forest management and are not supported financially by the University of Maine, or any other institution.

Your support of Hirundo is greatly appreciated. Thank you!

Please make your tax deductible donation on-line
www.hirundomaine.org/support
or mail a check to:

Hirundo Wildlife Refuge
P.O. Box 266
Orono, Me 04473

"In the end
we will conserve only what we love,
we will love only what we understand,
and we will understand only
what we are taught."

-Baba Dioum
Senegalese conservationist

SMILE
— a message sponsored by Hirundo Wildlife

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