Loon Caller

Summer 2011

VERMONT CENTER FOR ECOSTUDIES
UNITING PEOPLE & SCIENCE FOR CONSERVATION

Vermont Loon Recovery Project
A program of
the Vermont Center for Ecostudies and
Vermont Fish and Wildlife Department

Nongame Wildlife Fund

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Insights on Intruder Loons

Most people who have spent any length of time on a lake with breeding loons have witnessed visiting loons. The territorial pair usually confronts the "intruder", sometimes resulting in aggressive behavior, failed nests, loss of chicks, and even adults killed in battle. These interactions can also look like a bunch of old friends hooting it up, so to speak. If chicks are present, they usually go into hiding during the intrusion and survive quite well.

Who are these intruders and what are they doing? The intruder loons are likely conducting a territory assessment, which is especially important during the transition from prebreeder to breeder. Since 1992, Dr. Walter Piper has been conducting behavioral loon research in Wisconsin on nearly 100 lakes where most nesting loons are banded. There are now enough adults banded as juveniles (ABJs) returning to nest themselves that he has gained some insights into these intrusions. The research has focused around male loons because they usually return to breed within 10 miles of their natal lake; females disperse more widely.

Dr. Piper's initial analysis indicates that loons are doing several things when they intrude into an existing territory. *1) Gaining Public Information: Prebreeders are looking for evidence of successful breeding and then settling there.* On 23 of 29 study lakes, intrusions were twice as frequent in the year after chick success compared to years after no chicks. Also, takeovers are significantly more likely to

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Rain Events, Intense Heat, and Climate Change

By John Cooley, Jr., Loon Preservation Committee, NH and Eric Hanson, VLRP

Climate change models predict that we will have wetter and warmer seasons along with more extremes. Are the recent fluctuations in weather random events or are they indicative of things to come? The rain events and high waters of 2011 have led to delays in loon nesting. Many traditional nest sites were under water at the end of May forcing loons to either look for new sites, wait, or forego nesting altogether. As of 31 May this year, 21 pairs had nested compared to 26, 30, and 37 pairs nesting from 2008-10 on the same date. Even more striking is that 62% of these 21 nests in 2011 were on nesting rafts compared to about 45% in each of the previous three years. Of the 25 known territorial pairs that had not nested as of 20 June 2011, at least 14 of these pairs' nest sites were affected by high water. During the past several years, the Loon Preservation Committee (LPC) in New Hampshire has documented a higher rate of flooded nests caused by intense rain events. In Vermont, the problem has been less acute because of the high numbers of loons nesting on rafts. If the major rain on 24 May had occurred in mid-June, the number of flooded nests would have been much higher.

In contrast, the 2010 season offered a welcome reprieve from the rain that has dogged loon nests in 2011 and in years prior to 2010. However, there was strong evidence that loons are sensitive to the climate trends that govern daily local weather patterns in other ways than rainstorms. According to the National Climate Data Center (www.ncdc.noaa.gov), the 2010 May-July loon nesting period was the warmest on record, and the abnormally dry conditions translated into rain totals that were half the 35-year average. In New Hampshire, the hot dry weather stranded some nests, and the record heat made incubation duties more demanding, likely causing some nests to fail and eggs not to hatch.

Tufts University veterinarian, Dr. Mark Pokras, has been finding new diseases and parasites in loons never documented until recently. It is unknown at this time whether these diseases could be associated with warmer waters during the summer and/or birds under higher stress. Other concerns with greater fluctuations in temperature and rainfall are changes in food webs both on our freshwaters but also in coastal areas where loons overwinter.

Off the nest cooling down.

It seems likely that collecting data on egg viability and nest failures, monitoring loon diseases, and figuring out how to assess loons' prey base may hold part of the key to explaining how loons and climate interact here, at the southern edge of the species' range. ***

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The Vermont Loon Recovery Project is a joint program of the Vermont Center for Ecostudies (VCE) and Vermont Fish and Wildlife Department (VFWD) The VLRP's mission is to restore and maintain Vermont's Common Loon population through monitoring, management, education, and research.

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The *Loon Caller* and VCE's *Field Notes* are free to citizen scientists, donors, and partners.

Vermont Center for Ecostudies
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Volunteer information and VLRP publications are available on VCE's website. Communications about the VLRP and the *Loon Caller* may be addressed to:

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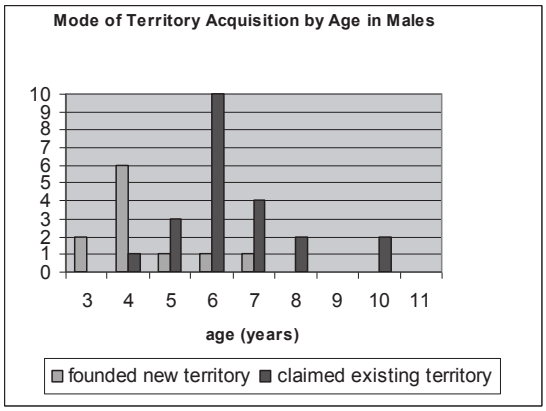
occur in a year following chick production. A takeover is when a challenging loon, male or female, kicks out one of the existing members of a pair. The other loon in the pair accepts the winner.

2) Gaining Site-Familiarity and 3) a Foothold: Prebreeders make repeated intrusions into established territories to become familiar with them and gain benefits and a competitive advantage when he or she gain ownership and/or when the owner leaves (e.g., dies or moves elsewhere). These are both likely occurring as young prebreeders tend to cluster their intrusions into a few adjacent lakes. We have observed this in Vermont where one lake seems to have many intrusions for a period of time, but then has several years with few intrusions.

Loons might also be 4*) conducting a direct assessment of the physical and biological features* looking for good breeding habitat or 5*) looking for territories that resemble their natal lake territory*. Dr. Piper does not think loons are settling passively on any lake or just looking for where loons are or are not (called conspecific attraction).



Dr. Piper has also revealed that age influences the mode of territory acquisition strongly in males. Three to 5 year-old males tend to found new territories in vacant lakes (peacefully), whereas 6 to 9 year-olds evict established males from their territories while in the peak of their physical condition. Old, displaced males go back to founding of new territories. In females, territory acquisition does not appear to be age-related.

Loons are long-lived, and territory acquisition is not a "one-shot deal". Multiple motivations and assessments are likely occurring by loons when looking for and acquiring a spot in a territory. As more observations of banded loons are made, our understanding will continue to increase. And maybe, we'll even begin to get some clues as to why big groups of loons congregate from July onward. *** EH

Dr. Walter Pipers teaches at Chapman University. Dr. Jay Mager and Dr. Charlie Walcott have also contributed to these studies. VLRP Coordinator, Eric Hanson, caught and banded hundreds of these loons in 1992-3.

Vermont Fish and Wildlife Department

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Hydroelectric Companies Helping Loons


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Water level fluctuation on Vermont's lakes and ponds was one of several major threats that contributed to the low loon population levels in the 1970s and 1980s. The early settlers built dams to power lumber and grist mills and kilns for metal. Dam owners could open up the dam or shut it down depending on their immediate needs. How much did the water fluctuate during a long work day sawing logs? If the fluctuation was more than a few inches, loon nests could have been impacted for a hundred plus years essentially stopping loon chick productivity. This is only a theory based on stories I've heard about how some dams were operated in the mid 1900s, so if anyone has more information, please let me know.

The scene has changed considerably since the 1800s. Most dams are still in place but are now considered "run of river" type dams where there are no intentional changes in water levels except for repairs. For "newer" dams producing electrical power on 15 to 20 larger lakes and reservoirs, water fluctuation likely impacted loons greatly from the 1940s to 1980s. When we realized loons were in trouble, the Vermont Fish and Wildlife Department and the Vermont Loon Recovery Project approached hydroelectric operators and asked them if they could hold water levels steady from May 15 until nesting was complete. Most companies agreed to this temporary and relatively low cost agreement.

Green Mountain Power maintain a relatively constant water level on Peacham Pond by having an employee adjust the outflow during rainstorms. Only TransCanada is required by their license to hold water levels steady for loons on Somerset Reservoir, which now has three territorial loon pairs. There are a few reservoirs on which companies will not keep water levels steady because of the cost associated with not producing electricity. And there are many reservoirs where stabilizing water levels during large rain events is difficult, as water levels rise faster than the water can be pumped or let out (e.g., Green River and Chittenden reservoirs, the Averill lakes, and Norton Pond). The outlet on Little Averill Lake is only 4 feet wide for a 500 acre lake. In these cases, nesting rafts are often essential if loons are going to nest successfully.

Like all sources of energy for our society, there are tradeoffs and impacts on the environment. If water levels fluctuate by more than 2 or 3 inches on a loon lake, nesting loons will likely be impacted. With the help of hydroelectric companies, we have been able to reduce that impact on many reservoirs. TransCanada and CVPS have also provided grants to support VLRP management efforts on their reservoirs and throughout the state.

*** E.H.

Close Encounters *By Shannon Maes, Sterling College, VLRP intern*

It is not often that one gets to see a loon up close. If you get lucky a loon will swim beside your kayak or canoe and for just a few seconds, you will open your eyes wide and take in the details of its form. Several weeks ago, a loon on Job's Pond swam right beneath the prow of our canoe. I watched it streak through the water, noting its black and white feathers and large webbed feet. It was so close I could easily have touched it. After it surfaced and swam away, I was conscious of feeling as though a sacred event had occurred.

The night that Eric and I rescued a loon caught in nylon cord on Lake Willoughby, I had a rare opportunity to be even closer. We filled the truck with loon capture equipment: a long handled net, a tackle box full of leg bands, pliers, wire cutters, a trolling motor, spotlights, and a car battery. We waited for the summer sky to darken, watching the evening light on Lake Willoughby become bluer. Once on the water we trailed the loon for an hour until it was too dark to follow, and waited another 20 minutes for total darkness before beginning to search with spotlights.


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The technique for catching a loon is most effective after dark. A spotlight is used to blind the loon, so it can't see what type of animal we are as we approach. It helps if there is a loon biologist in the boat who can mimic loon greetings and lure it in close. But even despite Eric's expertise and our other preparations, I didn't believe that we would be successful. To my amazement, the loon was beside the boat before it dove. Eric slipped the net in front of it, and in a blur the loon was in the boat.

On shore I helped hold the loon securely, while Eric snipped and untangled the string. I felt its soft feathers and strong, heavily breathing body. When we were finished I was overwhelmingly glad to see it go, free from the string that had kept it from diving, preening, and flying. Without our help, it would certainly have died. During the drive home I reflected on the wonder of rescuing a wild animal, and crossing the boundary between appreciating an icon and helping a loon in the process. ***

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2011 Vermont Loon Update (as of late June)

- 54 nests confirmed; most non-nesting pairs will be checked again by early July.
- Pairs delaying nesting because of high water: at least 20 to 30.
- 7 failed nests : only 2 confirmed flooded (possibly missed early nesters if flooded), 1 depredated, 4 unknown.
- 2 new confirmed nests: Flagg Pond (likely nested in recent years) and Nelson Pond.
- Osmore Pond pair nested for only 2nd time in 5 years; Greenwood pair observed nest building (has not nested since 2002).
- First time chick on Kent Pond and chick on Woodward Reservoir for only 2nd time in 7 years of trying. Fourth nest failure in 4 attempts on Norton Pond—North territory.
- Major article on loons in July/August issue of *Yankee Magazine*...check it out.
- Developing new fact sheets for lakeshore owners and boaters: *Loon and Lake Stewardship*. If you would like copies for your lake association or can help distribute to neighbors , please contact Eric Hanson.


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Other major VLRP funding comes from TransCanada, CVPS, and VT Watershed Grant.

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