

## ALGONQUIN PARK IS BLACK BEAR COUNTRY

For most Park visitors, seeing a Black Bear in its natural environment is an exciting experience. However, the excitement diminishes when that Black Bear is rummaging through your cooler or tent, searching for food. As visitors camping in bear country, you have a responsibility to follow the bear rules and to know what to do if you encounter a bear.



Peter Ferguson

### Rules in Bear Country

Each year, Park staff spend hundreds of hours dealing with problem bears – help our staff by following the rules when camping in bear country.

#### 1 Never feed or approach bears

The Black Bear is an intelligent animal, with the ability to remember food locations and can quickly become accustomed to human sources of food. People who feed bears create problems for everyone.

#### 2 Store food out of reach of bears

In campgrounds and picnic areas, store all food (including pet food) inside the closed trunk of your vehicle, if possible. Do not store food, cooking utensils or fragrant items, such as soap, toothpaste, or shaving cream in your tent.

When camping in the backcountry, put all food in a pack and hang it well off the ground—at least four metres off the ground and two metres away from the tree trunk—and away from the vicinity of your tent.

#### 3 Keep your campsite clean

In campgrounds, reduce the availability of garbage, and consequently garbage odours, by depositing your sealed bags of garbage daily in the bear-proof waste containers. Clean your picnic table and barbecue after every use, and clean up any spilled grease.

When camping in the backcountry, burn any food scraps and fat drippings thoroughly in a hot fire. Any remaining garbage should be placed in your litter bag and suspended along with the food. To eliminate food odours, dishes should be washed immediately after each meal (preferably well away from your campsite).

**Charges can be laid for leaving out items which may serve as attractants to any wildlife.**

**BEAR SPRAY** is pepper spray with a strength, and a propellant, specifically formulated to deter bears when it is sprayed in their eyes. Know how to properly use, store, and carry this product (available from many outfitters). Keep in mind that bear spray is no replacement for appropriate conduct in the outdoors.



First ever Rock Bass caught in Lake Opeongo

## Did we get 'Eve'?

This 5-year-old female Rock Bass was caught on July 8 this year from Lake Opeongo. It's the first Rock Bass reported from Algonquin Park's largest lake. Lake surveys have never revealed young Rock Bass in Opeongo so this one is likely an introduction from an angler.

Rock bass are not native to Algonquin Park. They are voracious eaters of small fish and they can have a major impact on native fish populations. For example, when young Lake Trout emerge in spring from the shallow rocky spawning beds where they developed over the winter and then head for deep water, they may be picked off in great numbers by introduced Rock Bass. Or the impact may be indirect, as when Rock Bass seriously reduce the numbers of prey fish that formerly sustained a lake's native Brook Trout population.

These impacts are much less pronounced in lakes and rivers where Rock Bass are native. In these waterbodies, the fish community has adjusted over time to predation by, and competition with, Rock Bass.

This is a worrying sign that invasive fish are spreading in parts of Algonquin Park and posing a threat to one of Canada's most important aquatic conservation areas – aided by individuals not aware of the risk to native species. In this particular case, the female was carrying eggs but had not spawned. Did we get 'Eve' and stop an invasion or are we too late? Only time, and park visitors interested in preserving native Brook Trout populations, can tell.

Remember that the use of live baitfish and the unauthorized introduction of any fish are not only ecologically unsound, but also illegal in Algonquin Park.

[www.algonquinpark.on.ca](http://www.algonquinpark.on.ca)

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The Visitor Centre offers free WiFi internet access... and while there, don't forget to check out The Friends of Algonquin Park bookstore, or enjoy a light snack or meal at the Sunday Creek Café.

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Algonquin

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The *Raven*  
A Natural and Cultural History Digest



## 60 Years of S'mammal Success!!

By Jennifer Hoare, Algonquin Park Biologist

Last year (2012) marked an amazing 60 years of S'mammaling in Algonquin Park! S'mammaling, in case you're wondering, is an endearing contraction for 'small mammal research'. Small mammals include mice, voles, and shrews among others, and the monitoring of their population abundances sheds light on the forest ecosystems of Algonquin Park. Thanks to the foresight of researchers more than 60 years ago, and decades of many dedicated folks along the way, we can now gain insights into the world of Algonquin small mammals that we otherwise wouldn't be privy to. One thing that we've learned is that even with 60 years of research we still find surprises; another is that you never quite know how valuable a long-term monitoring project will be given the unpredictability of environmental phenomenon.

Small mammal monitoring in Algonquin Park was started in 1952 by Dr. Bruce Falls from the University of Toronto. The project is now in its third generation, being passed from Dr. Falls to Dr. Ron Brooks of the University of Guelph who led the project from 1988 to 2009, and most recently to Dr. Andrew McAdam, also of University of Guelph. These three, along with over 100 enthusiastic university and graduate students

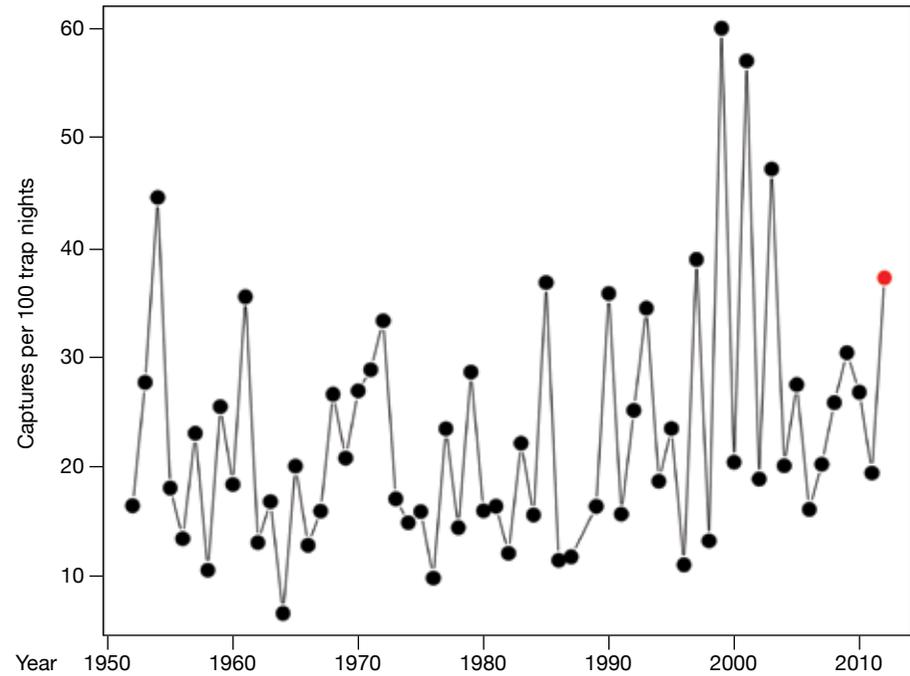


Small mammal researcher checking traps in the early days of the long-term research project

are responsible for what is now the longest running study of forest small mammals in North America and rivals any other small mammal research project in the world! It is exceptionally rare that such a dataset exists.



## Small Mammal Abundance 1952 to 2012



Every spring for the last 61 years researchers arrive at the Algonquin Wildlife Research Station on Lake Sasajewun, and go about preparing for a summer of small mammal trapping. There are 17 traplines along the Hwy 60 corridor, and each trapline has a series of live traps that capture small mammals overnight. Early in the morning traps are checked and captured small mammals are given an eartag as an identifier – each eartag has a unique number on it. The animals are also weighed, and measured before being released. By doing this night after night and year after year using the same methods, researchers have slowly built a dataset that allows us to ask questions about small mammal ecology with the benefit of a long-term perspective.

So what of these s'mammals and why are they so important? Small mammals are

a key component of the forest ecosystem, more important than you might expect considering that they go about their lives



Deer Mouse with unique eartag identifier captured as part of the long-term small mammal project

fairly inconspicuously to us. As prey species for many other animals, changes in small mammal abundance can have a big impact on their predators. For instance Northern Saw-whet Owls have been shown to choose breeding habitats based on high populations of Red-backed Voles. With that in mind, take a look at the graph of Red-backed Vole abundance: we would expect then that

1993, 1999 and even the last few years would be good years for Saw-whet Owls here in Algonquin Park with higher capture rates for Red-backed Voles, especially compared with the decades prior to the mid 1990s.

On the flip side though, some s'mammals are pretty voracious predators themselves. Soricid shrews are a family of really small, small

mammals. Some shrews can weigh five times less than a Deer Mouse, but unlike Deer Mice that feed on plant seeds and berries, shrews are insectivores. As a rule shrews have a very high metabolism and so consume at least their own weight in food every day. Imagine eating your weight in insects and still being hungry! On top of that shrews can exist at densities of dozens per hectare, and depending on the year can make up a significant proportion of all small mammals caught on the research project. With that many shrews eating their weight in insects every day, you can imagine the significant impact they have on Algonquin's insect community.

So we understand that s'mammals are an integral part the forest community. But looking at the 60 years of data we see some enormous fluctuations in both the community

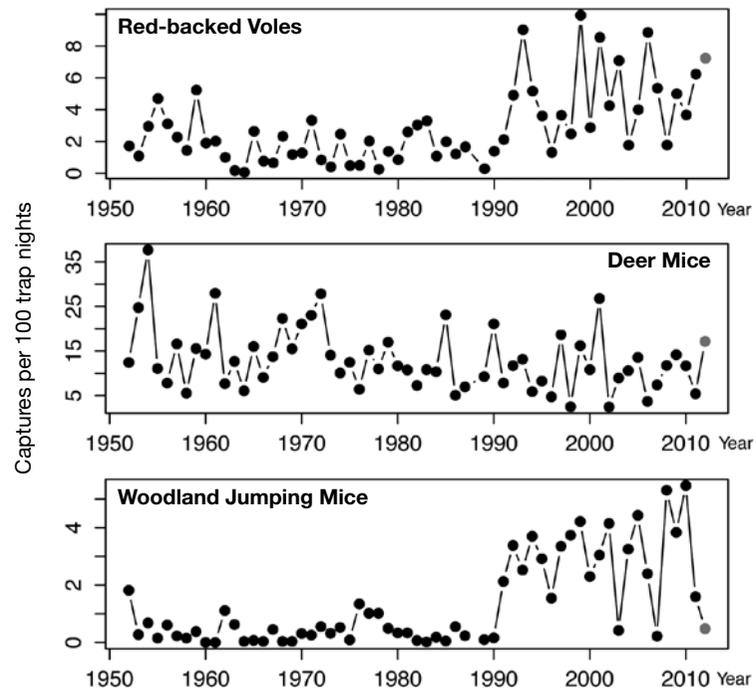


Red-backed Vole

and individual species. The Deer Mouse is one species that has repeated peaks and valleys. Although not regular these cycles of boom and bust were something that Dr. Falls sought to better understand. Based on their research Dr. Falls and his counterparts linked deer mouse populations to weather and sugar maple seed crops. Favourable summer weather that produces bumper sugar maple seed crops are followed the next year by higher numbers of deer mice whose diet would have been largely maple seeds. This linkage, Dr.

Falls notes, is not one that could have been made with only a couple of years of data. Look again at the peaks and valleys of the deer mice abundance chart. Now just pick any 5-year section of that chart. The information you have in just 5 years is very limited and consequently so are the conclusions you can make.

## Abundance by Species 1952 to 2012



To bring this concept of seed crops and s'mammal populations into what we currently observe take a minute to ponder the summer weather of 2012 and 2013. 2012 was characterized by a severe drought in Algonquin Park, and as a consequence a relatively poor year for natural food sources (e.g. tree seeds, berries). By contrast, 2013 is shaping up to be an excellent year for tree seeds. Both events will likely result in an effect on the Deer Mouse population, one a negative effect, and one positive, but we will have to wait for 2013 and 2014 trapline data to know to what degree. This is one way that extreme weather events, and potentially climate change, can start to



Small mammal researcher weighing one of the small mammals.

have an influence on the peaks and valleys that we see in the small mammal dataset. It is only with the benefit of a long-term perspective that we would be able to detect these relationships. As more awareness has been given to climate change, the value of long-term datasets has increased, but of course we cannot create long-term datasets in response to current problems.

To further emphasize the value of such a long-term data set, look at the abundance chart for Woodland Jumping Mice. From the 1950s to 1990s Woodland Jumping Mice captures were consistently infrequent. But as of the early 1990s abundances of Jumping Mice became more variable, and in some

years doubled or tripled. It's hard to say what the trigger was for this population change but it goes to show just how dynamic small mammal populations are. In 1990 we had 38 years of data for Woodland Jumping Mice - a long dataset in its own right - but in no way did the first 38 years predict the peaks and valleys of the Woodland Jumping Mouse population that we see now.

So what does it take to achieve a long term dataset? Dedication and foresight are two qualities that come to mind. When Dr. Falls initiated this project he likely wouldn't have envisioned it in the context of climate change.

The project was envisioned as a means of looking at population cycles and Dr.

Falls had the foresight to know that it would take more than a couple of years to accurately understand the cycle. We know now that even after 60 years there is more to discover about the influences on the small mammal community, and so it is with dedication that we'll endeavour to continue the S'mammal project! And maybe someday, a long time from now, somebody will thank all of those researchers for creating the longest running small mammal research project in the world.

Special thanks to Dr. Bruce Falls and Dr. Ron Brooks for their insights while preparing this article. Also thanks to Dr. Andrew McAdam for providing the graphs and with help writing the article.

## Want to Help Support Long Term Research in Algonquin Park?

One of the greatest challenges that long-term research projects face is continued funding through short-term changes in funding patterns. You can help ensure the continued collection of this valuable data through donations to The Friends of Algonquin Park. Annually, The Friends of Algonquin Park provide funding to a variety of research projects and in many cases this funding is crucial for the projects continuance. For information on how to donate and details on the research projects contact [www.algonquinpark.on.ca](http://www.algonquinpark.on.ca).