



Along a small mammal trapline, now nearly 70-years on. SAMANTHA STEPHENS

leaders at environmental non-profits, and notable government officials. For instance, AWRS alumnus Dr. James Bruce Falls was awarded the Order of Canada in 2016 for his pioneering work in ornithology (study of birds) and his lifelong effort and leadership in nature conservation. As professor at the University of Toronto, Dr. Falls conducted nearly four decades of field studies of bird and small mammal populations based at the AWRS. He was instrumental in founding the Nature Conservancy of Canada and Bird Studies Canada. Alongside Dr. Falls are contemporaries Dr. Robert MacArthur, an influential ecologist, and illustrious wildlife artist Robert Bateman—and that’s just a selection from one generation of researchers!

One of the legislative objectives for provincial parks is to enable scientific research and support the monitoring of ecological change on the broader landscape. The long-term studies based at the Algonquin Wildlife Research Station provide unparalleled opportunities for environmental research and monitoring. Long-term ecological studies provide a key baseline for maintaining

biology, support ecological integrity, predicting future change, and provide knowledge for evidence-based policy and decision making in the management of ecosystems and parks. Also, long-term studies are essential for the formulation and testing of scientific (ecological) theory. For some long-lived flora and fauna (such as trees and turtles), and slow ecological phenomena (such as forest maturation and succession) such longitudinal studies are necessary to gather an understanding of even the basics.

In short, science is a crucial part of understanding and protecting the natural places that you and I love. The AWRS is a place of discovery, experiential learning, and rich history. Our 75 years of ecological research have contributed significantly to knowledge, policy, and conservation of species and ecosystems in Canada.

The AWRS operates as a registered Canadian not-for-profit organization administered by a volunteer Board of Directors. You can find out more and support the science of the Algonquin Wildlife Research Station at algonquinwrs.ca

Algonquin Provincial Park’s

9th Annual WINTER IN THE WILD

February 15th, 2020

(Family Day Weekend)

All activities are free with the purchase of a valid Park Permit

- Snowshoeing
- Special Presentations
- Winter Camping Demos
- Winter Birding
- Ice Skating
- Wolf Howl
- BBQ at Mew Lake Campground
- Roasting Marshmallows and more...

For more details check algonquinpark.on.ca



ALGONQUIN VISITOR CENTRE

HOURS OF OPERATION

Open Daily

9 am - 4 pm

(limited services)

Museum • Bookstore & Nature Shop • Café

WiFi

Weekends & Holidays

9 am - 5 pm

(full services)

Winter Hours — October 28 to April 26, 2020
Holidays — Christmas (December 27 to January 5, 2020) | **Closed December 24-26** • Family Day (February 17, 2020)
March Break (March 16-20, 2020) • Easter Weekend (April 10 to April 13, 2020)

Algonquin Logging Museum - Reception Centre is closed. The 1.3 km trail with outdoor exhibits is available year-round.

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Algonquin

The

Raven

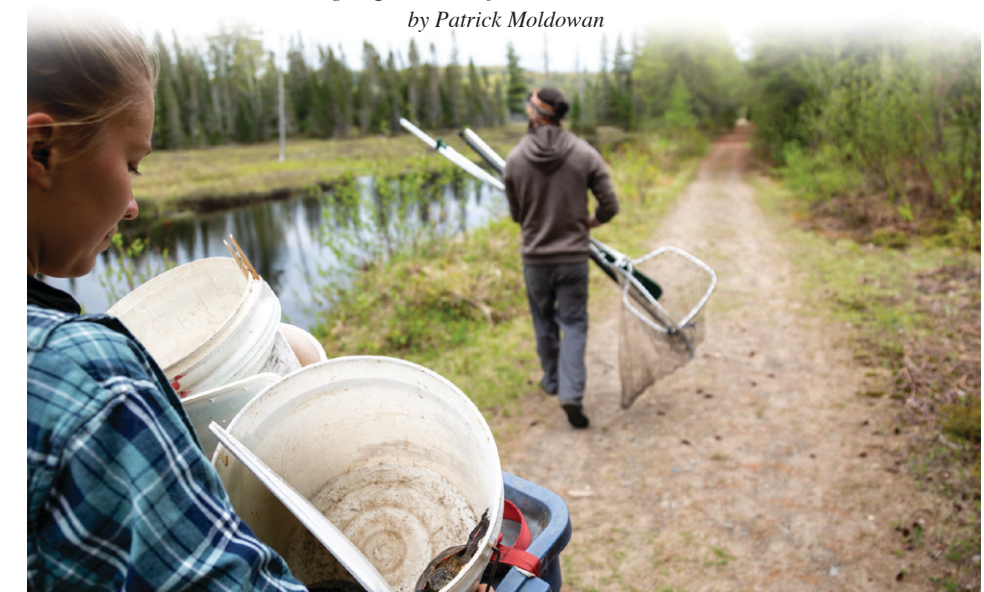
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75 Years of Wildlife Research

Behind Algonquin Park trail guides, popular books, dioramas, educational programs, and policies is science. Behind much of that science is the Algonquin Wildlife Research Station.

by Patrick Moldowan



Turtle Rodeo. Following their annual check-up, turtles are returned to the pond whence they came. SAMANTHA STEPHENS

The historic dinner bell rang and out of the forest, bogs, and labs came muddy boots, soggy pants, and sweat-brimmed hats. Grinning students served themselves and sat side-by-side at picnic tables, everyone itching red welts delivered from the day’s onslaught of biting flies and mosquitos. Conversation grows as portions dwindle. “Today we caught Snapping Turtle Y12, Cujo. He hasn’t been seen since 1997! How about you?” says one turtle researcher (Turtler, to give them their title). “The last

Canada Jay nestlings of the year have fledged and now the real work begins with tracking their movements” responds another student (Birder). “Oh, we combed about a dozen fleas off the Deer Mice captured this morning—this is an awesome sample. I am so excited” exclaims a young biologist (Sm’ mammaler)! “Hey, anyone see the moose that have been up the trail? That calf is growing so quickly”! Everyone nods and continues to fill the void left in their stomach from an exhausting day in the field.



AWRS Cabin 1 with packs ready for a day of field biology (May 1964). DAVE SPRATT

Algonquin Provincial Park is home to an at-first unassuming facility that looms large in circles of wildlife science. Hugging the shoreline of Lake Sasajewun, a small number of rustic red and white cabins and brown lab spaces are unintentionally disguised among the surrounding forest. The Algonquin Wildlife Research Station (AWRS) is home to generation after generation of enthusiastic biologists-in-training and this year is celebrating 75 years of excellence in wildlife biology and conservation.

On 27 June 1944, the Ontario government dedicated approximately 80 square kilometres (7,770 hectares) of Algonquin Provincial Park as a “wilderness area” with the specific purpose of wildlife and silvicultural (tree growth and cultivation) studies. Closed to fishing, logging, cottages, resorts, and public travel, this single but sizable plot of land would prove to be a rich outdoor laboratory that has informed wildlife science and conservation in Ontario, North America, and around the world. From flies to flying squirrels, mice to meningeal worms, shrews to salamanders and songbirds, turtles to trees, and woodpeckers to wolves, the AWRS has been host to great discoveries of our natural world. In fact, the AWRS is approaching 700 scientific research papers worth of discoveries! In this small space afforded, I will share a selection of such discoveries.

Over the past century, moose populations

across eastern and central North American have experienced periodic and unexplained declines. Although the cause has been mysterious, the symptoms of “moose sickness” were unmistakable; wobbling gait, weakness of the hindquarters, head nod, aimless wandering, and listlessness. In the early 1960s, Dr. Roy Anderson, a renowned Professor of parasitology at the University of Guelph, cracked the case wide open. While conducting research at the AWRS, a colleague showed Anderson a worm found in the cranium of a road-killed White-tailed Deer. Rather than cringing, Anderson leaned in for a closer look. The shared observation of this parasitic nematode, known as brainworm or meningeal worm (*Parelaphostrongylus tenuis*), was an eye opener. Drawing on

pre-existing knowledge of similar parasites elsewhere in the world, Anderson set to work to gather and assemble a compelling series of facts about the mysterious moose declines. Through a combination of meticulous observation and experimental work Anderson described how deer can carry the parasite with limited or no consequence to their health; deer droppings spread the parasite’s eggs; nematode eggs are ingested by snails and slugs, hatch, and continue larval development inside their gastropod host; moose become infected with larvae through the accidental consumption of snails or slugs while browsing; larvae migrate through the abdominal lining, penetrate the spinal cord, and travel to the brain to complete their life cycle. In the end, the meningeal worm cripples the central nervous system of moose, leading to their untimely demise. These findings and those that would follow have contributed enormously to our collective knowledge of deer-moose interactions, the



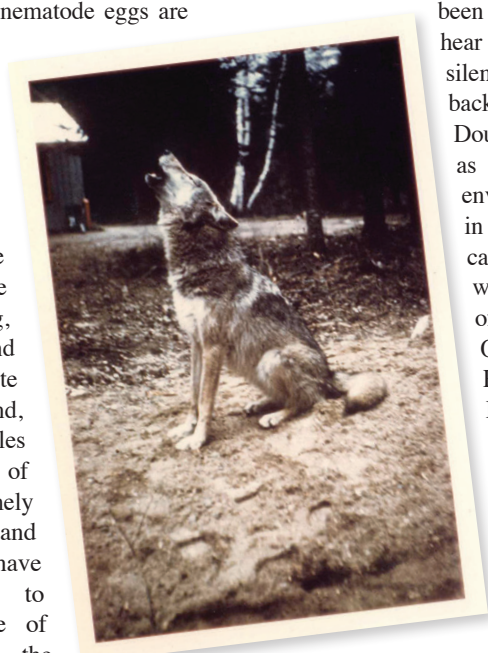
Turtle eggs are temporarily collected, weighed, and measured to inform the biology of these imperiled creatures. SAMANTHA STEPHENS

transmission of this parasite, and the action of wildlife managers to conserve moose.

Have you ever been to one of Algonquin’s famous public wolf howls? Maybe you’ve been fortunate enough to hear a wolf howl break the silence of night while on a backcountry camping trip? Dr. Douglas Pimlott, recognized as a founder of the modern environmental movement in Canada, spent his early career at the AWRS while working for the Department of Lands and Forests (now Ontario Ministry of Natural Resources and Forestry). In an effort to understand the biology of wolves, Dr. Pimlott was faced with a serious problem: how do you find these elusive animals on the Algonquin

landscape? Having conducted a recent study of communication and social dynamics using captive animals, Dr. Pimlott and colleagues had an idea. On 5 August 1959, they broadcast a tape recording of wolf howls into the night. Their first broadcast was a howling success as wolves responded to the recording! Such a development propelled foundational work in wolf biology around the globe, led to research that established the ecosystem importance of wolves as apex predators, and ended the wolf bounty in Ontario. Dr. Pimlott would go on to teach at the University of Toronto, hold national and international appointments for organizations involved in the protection of wildlife and wild areas, and work tirelessly to promote coexistence with wildlife.

More recently, turtle research in Algonquin Park has been making a splash. If you’ve been coming to Algonquin Park for several years and especially if you’ve hiked the Mizzy Lake Trail you have probably observed turtles with “licence plate” tags or paint markings on their



Hand-reared wolf, from Doug Pimlott’s research study howling opposite the AWRS garage (1963). DAVE SPRATT

shell. The turtle project began in 1972 at the AWRS when 20 Snapping Turtles nesting on the Lake Sasajewan dam were tagged. By the late 1970s and early 1980s, studies of Painted, Blanding’s, and Wood Turtles were incorporated. The study of long-lived turtles has complemented the concurrent study of short-lived small mammals (1952-present) in comparatively undisturbed aquatic and terrestrial ecosystems, respectively. Many of the turtles captured as adults in the first years of study are still alive and reproducing annually, and many are confidently estimated to exceed 100 years of age. It is data collected from long-term study of turtles in Algonquin that can be credited in-part with the recent listing of the Midland Painted Turtle as a “species of special concern” in Canada and the end of the legal Snapping Turtle harvest in Ontario and several U.S. states. Nearly a half-century on, the turtle study has investigated a wide breadth of topics—behaviour, diet, growth, habitat use, movement, overwintering biology, reproductive output and success, conservation strategies, population biology and the impacts of increased mortality, the challenges of thermal constraints on this northern population, and increasingly the consequences of climate

change for the biology of these organisms. For all that has been studied, many questions remain. For example, how long do turtles live? Also, despite intensive sampling of focal wetlands, it is not unusual for AWRS turtle researchers to recapture a turtle that has not been seen for a decade or two. Where do they go? What are they doing? How does this influence our understanding of their populations and their conservation? The study of Algonquin’s turtles has continued annually under the dedication of Dr. Ron Brooks (University of Guelph) and his former students, now professors themselves, Dr. Jacqueline Litzgus (Laurentian University) and Dr. Njal Rollinson (University of Toronto), and dozens of students.

As you’ve encountered throughout this article, all science has a human element. Annually, the AWRS serves as a training ground for several hundred students engaged in the natural and environmental sciences—a mix of secondary school field trips, undergraduate field courses in the environmental sciences, and graduate students conducting thesis research projects. After three-quarters of a century, the alumni of the AWRS are spread around the globe and are represented by esteemed educators, practicing scientists,



Nesting female Midland Painted Turtle, marked with white paint on her carapace so that she can be identified from afar. SAMANTHA STEPHENS