

The Hunters and the Hunted on Isle Royale



The wolves and moose of Isle Royale, Michigan, have been on a roller coaster of population ups and downs for decades. Earthwatch teams are helping Dr. Rolf Peterson (left) continue the longest running predator-prey study to help find out why. *Text and Photos by Philip Johansson*

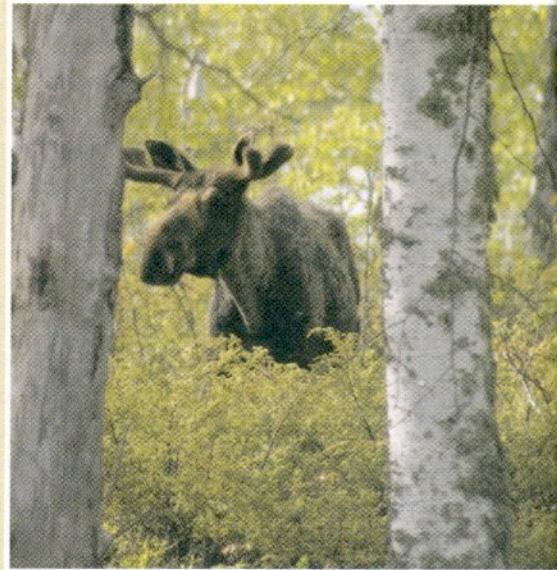
"Bone!" I hollered, pulling a fully articulated hind leg the size of a garden rake from the underbrush and carrying it toward the group. Dried flesh still clung to the joints, and dime-sized ticks scrambled onto my sleeve in search of a livelier host. "Bone!" yelled a teammate ten meters away, concealed by the dense spruce-fir forest. "It's a scapula!" Gradually, as we gathered them in a sunny clearing, the bones began to tell us an intimate story about one moose's struggle between life and death.

Death is never pretty. When you are talking about a 500-kilogram moose that died three months earlier, was

dismembered by wolves and ravens, and is the current obsession of maggots and carrion beetles, death can be downright gross. It is all the more remarkable that I found myself

and five other willing teammates picking through the scattered bones of just such an animal on a sultry afternoon last June.

Although any passer-by would probably question our soundness of mind, we did not have to concern ourselves with being observed. We were in the trackless wilderness of Isle Royale National Park, a remote island in Lake Superior and the least-visited national park outside Alaska. Our only witnesses were the Blackburnian warblers and white-throated sparrows that scolded us from the spruce



Learning from Wolves

Excerpted with permission from *A View from the Wolf's Eye*, By Candy Peterson

As I came to know Isle Royale, I learned to respect the hardship inherent in nature. A wolf must catch and kill an animal whose skill at evasion has been evolving as long as the wolf's predatory skills. It risks its life every time it tackles a moose, which can kick ferociously. A moose has problems of its own—processing 40 pounds of leaves and twigs a day is hard on the teeth, and broken bones and injured joints cannot be set or replaced. Yet the hardships are what make the whole system beautiful, spare, and healthy. And, completely engaged in the present and not aspiring to live forever, wild animals seem content, unencumbered by guilt about the past, envy in the present, or worry about the future. The whole system is without malice. Wolves attack out of need, not anger, and in so doing perform their role in the scheme of things by protecting the trees that the moose need to live...We, uncertain of our role in nature, are whiners and worrywarts, forever devising methods to avoid hardship, alleviate pain, and prolong life, cursing bad fortune, ungrateful for blessings. We cling to a culture of materialism and control that enslaves us and robs us of the sense of well-being. I am careful who I call a "dumb animal."

To read *A View from the Wolf's Eye*, go to www.isleroyalewolf.org/candy's_book.htm

Imbalance



Isle Royale for the past 45 years to clarify the role of wolves in the population dynamics of the island's moose. Dr. Rolf Peterson (*Michigan Technological University*) has directed this research project since 1971. Intrepid Earthwatch teams have helped him since 1988, with logistics coordinated by his gracious colleague and wife, Candy Peterson (see "Learning from Wolves"). Peterson's findings have not only added greatly to our understanding of moose and wolf population dynamics but have contributed to a growing public interest in wolf conservation worldwide.

"One ecological effect of wolves is that they make their prey strong," said Peterson, during our orientation the day before. "They eliminate animals that are unfit for one reason or another. They reduce the incidence of disease. Wolves remove animals that are starting to deteriorate from age or disease long before they would die on their own." The current object of our fascination was a case in point. This was the carcass of an older cow moose, and close inspection of the pelvis and femur revealed that she had severe, debilitating arthritis in her right hip. Fatty marrow still lined her bones, suggesting that she didn't starve to death but rather was relieved from her discomfort by Isle Royale's ever-vigilant wolves, probably members of Chippewa Harbor pack.

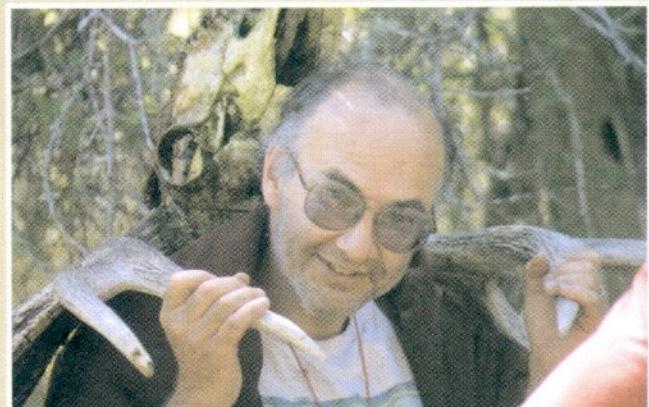
boughs, the bald eagles and ospreys circling overhead, and perhaps, just perhaps, a curious wolf. Isle Royale is one of the few places in the "lower 48" where these hunters roam.

Our bone-hunting activities were part of a larger study that has taken place on

This was only the first moose that we found during our one-week foray into Isle Royale's backcountry. It was the 47th discovered by Peterson and his colleagues and assistants last year, and the 3,876th found since the project started in 1958. Each of these moose has a similar story to tell, and together they add up to the most remarkable long-term sample of a prey population in the world. By the end of the expedition our team would straggle back to base camp under the weight of bone samples from ten new finds, including two fully antlered bull skulls, feeling every bit as adventurous as Lewis and Clark and beyond ready for a shower. Nobody said collecting moose skeletons would be easy (see "Tough Going").

While Peterson conducts much of his research during the winter, when he can observe wolf packs from the air and backtrack to their most recent kills, he relies on stalwart Earthwatch teams to relocate some kills and discover others in the inaccessible wilderness. Isle Royale has nearly 300 kilometers of trails, running the length of the 65-kilometer island, but much of the bone-hunting is conducted off-trail. Despite a maximum elevation of only 213 meters, bedrock ridges running the length of island make the terrain a yo-yo's delight of rocky crests followed by dense, inscrutable cedar swamps, challenging the fitness of even the most hardened "stairmaster" user.

"It's a good thing there are no hills on this island, or I'd be really tired," said Barrett, at age 17 more resilient than



his other, shall we say "mature," teammates. Barrett joined the team along with his grandfather, Ron, a retired public health professional from Iowa and legendary moose-bone-finder, who was enjoying his 12th team on the project. Barrett had heard of Ron's adventures on Isle Royale since he was five years old, so he didn't think twice when his grandfather finally invited him.

Our team was rounded out by Jim, another grandfather and a retired high school guidance counselor, and Sherry, a mother of three, professional cake decorator, and former nurse. Sherry had been to Isle Royale four times before, and last time met an Earthwatch team who showed her what they'd been collecting. "Two of my sons were with me, and their eyes lit up," said Sherry. "My gears started turning, and here I am a year later."



rival. Even more remarkable, after vigorous attempts to separate the antlers, Tim carried the interlocked skulls back to

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Our fearless leader was Tim, the veteran of nearly as many teams as Ron and renowned for once finding two antlered skulls locked together in true mortal combat. Our minds reeled at the story these bones told, of one bull apparently suffering a fatal jab to the snout, the other dying an agonizingly slow death by starvation, weighed down by his

base camp on his back. Once there, of course, they promptly popped apart.

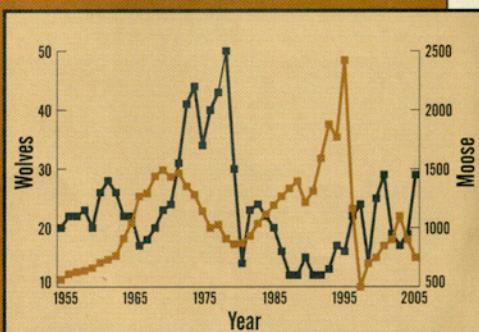
None of us were what you would call athletes, even being generous, but each of us had enough backpacking experience to deal with all the adversities of heavy loads, unpredictable weather, and eye-poking spruce thickets.

Feast or Famine

Isle Royale's moose and wolf populations have experienced extreme fluctuations over the last 50 years. Wolf numbers tripled during the 1970s, producing the highest wolf density in the world in 1980. Moose numbers declined in turn, bringing the wolf food supply down to starvation levels. An introduced disease, canine parvovirus, probably contributed to the wolf population crash that brought the population from 50 to 14 between 1980 and 1982.

Released from intense predation, the moose population increased until 1996 when a combination of depleted browse, deep snow, winter ticks, and a very late spring cut their numbers from a record 2,500 animals to 500. It was a banner year for wolves, which had more carcasses than they could consume.

Moose numbers have been generally increasing since 1996, but so have the wolves'. Last summer the wolves numbered 29, in three packs, while there were 750 moose. The fact that there were fewer moose last year than the year before suggests that there are other variables involved, including the possible ecological impacts of global warming. For more information, go to www.earthwatch.org/pubaffairs/news/peterson3.html





More importantly, we were driven to add our own pieces to the puzzle of Isle Royale's moose and wolves, supporting Peterson's celebrated study, despite the blisters and backaches.

"This is Rolf and Candy's life," said Sherry. "I am just so honored to be collecting even a tiny part of their data." On a steep slope of spruce and aspen overlooking a meandering cedar swamp, Sherry found a key piece of data, indeed: the partial skull of a moose calf half buried in the leaf litter.

"Bone!" she called out, and the call was echoed by teammates as we gathered to search for the scattered remains once more. It was our tenth find of the expedition, and cause for a jubilant celebration marked by (more) chocolate and peanut butter.

The skull was heavily chewed, and we found no other bones despite a half hour of shuffling through the undergrowth. Wolves may devour many of the delicate bones of a calf, including the skull to get at the nutritious brain tissue, which made this skull an important find.

Although Peterson contends that wolves have a "sanitizing" effect on their prey, picking off the old and infirm, they do not stop there. Wolves also single out calves during the spring and summer, and by doing so have a tremendous potential to limit population growth. Peterson's decades of findings show that wolf numbers on Isle Royale are profoundly linked the moose population. But unlike ecosystems where there are other carnivores, for instance bears or people, predation apparently leads to some major fluctuations (see "Feast or Famine").

"Where there are bears, wolves, and humans as carnivores, moose are at their lowest levels, maybe ten percent of what we have here, and they're pretty stable," said Peterson. "Each additional predator species lowers density and tends to take out the highs and lows, particularly the highs."

Isle Royale's wolves kept to themselves, as they typically do, but we saw plenty of tracks and scats on the Greenstone Ridge and I did get to hear them once. Camping near the shore of Chickenbone Lake, I fell asleep to the haunting last calls of a white-throated sparrow, while spring peepers, a screech owl, and a lonesome loon took up their nighttime chorus. I awoke in the wee hours of the morning when a wolf called across the lake like a soprano sax dipped in hot butter, a heavenly, howling wind. I would trade all the chocolate and peanut butter in Candy Peterson's larder to hear that again, and I felt grateful that there were still places in the world where wolves and their prey continued their age-old dance.

"The whole system of predator-prey interaction has evolved over tens of thousands of years," said Peterson. "Darwin used the wolf as an example of natural selection. The predator's ability to kill the prey is about the same as the prey's ability to escape. Otherwise you wouldn't have them still with us."

With Peterson's important findings and the conservation efforts they inspire, and a little luck, wolves and their prey will be with us for a good deal longer.

Philip Johansson is managing editor of Earthwatch Journal. For more information about the wolves and moose of Isle Royale, go to www.isleroyalewolf.org or read Rolf Peterson's excellent book: *The Wolves of Isle Royale: the Broken Balance*.

To learn how you can get involved, go to www.earthwatch.org/expeditions/peterson.html

Tough Going

Not everyone who supports a sustainable future wants to fight their way through tangled cedar swamps in search of rotting moose carcasses. But there are Earthwatch volunteers out there who are willing to rough it, climb steep slopes, clamber over rocks, hike long distances, carry heavy packs, and poop in a hole in the ground in the name of science. For these select volunteers, Earthwatch provides several rugged projects that will challenge even the most adventurous, from *Sacred Inca Mountains* to *Ecuador Forest Birds*. Consult an expedition coordinator at Earthwatch to learn more.

"The people who think it's weird are going to think it's weird," said Sherry, as she shouldered her burden of moose parts and headed down the trail. "The people who are sitting at home thinking, 'Wow, I wish I could be there,' they know who they are. They know who to call, and they can be out here next year."

