How Do You Catch a Moose?

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How do you catch a moose? Of course, some people would ask, "Why would you want to?" These seemingly simple questions lie at the heart of the experience for graduate students in wildlife science.

As Boone and Crockett professors, we build an educational experience for each graduate student with a goal that is at the core of the Boone and Crockett Club's reason for establishing the professors' program: to make a difference in wildlife conservation. We attract some of the brightest people in the world and we train them to be good scientists. But we want more from them. We want them to be able to make science effective in the world of wildlife management and conservation policy. We train them to be scientists and leaders. That graduate training is the subject of the Professor's Corner this issue.

The graduate experience in wildlife is designed to provide a solid education in solving the kind of practical problems wildlife professionals face every day: handling wildlife, analyzing data, and writing. The question, "How do you catch a moose?" is almost a metaphor for this experience. Learning to handle wildlife safely ends up covering a lot of territory from the skills of hunting and trapping to the basics of pharmacology to working effectively with people. Data analysis draws students into a world of ever-more sophisticated mathematical models, geographic information systems, and statistical analysis. The culminating challenge is learning the skills of writing technical science.

While how is generally the underlying focus of the Master of Science degree in wildlife, the Ph.D. experience is captured in the second question, "Why would you want to?" Why is essential to understanding the relationships between wildlife and the larger ecosystem. Why is chronic wasting disease spreading in some places and not others? Why do predators have greater impact in some years? To answer these questions requires that students learn to think critically. New students expect graduate education to be just an extension of the undergraduate system of classes and term projects. What they find is that learning to think critically occurs mostly outside the classroom. They learn to develop their own ideas and hone their thinking through critique by their peers.

The best graduate student experiences, and the best science, tend to arise by a process that is neither prescribed nor easily managed. This is because the best occurs when a spark is born of an amalgam of technical skill, critical thinking, and creative inspiration. As faculty, we look for students who have the potential to achieve that amalgamation. We teach and mentor students, but above all, we encourage them. We watch for those sparks. When those sparks come, we fan them into flame. The range of knowledge required and the pace at which it has to be assimilated means graduate students in wildlife face one steep learning curve after another. To succeed, these students have to be not only exceptionally bright and passionate about wildlife, but absolutely tenacious.

What separates education in wildlife science from other sciences is that we take a final step with students. We ask them to translate their findings into implications of wildlife management and policy. We put them in front of hunters, wildlife managers, and boards of directors. They need to be effective in conveying their science to the scientific community, but we want them to be equally effective with the non-scientists.

It is no coincidence that this education paradigm and the mission of the Boone and Crockett Club to affect policy through science are such a good combination. Both can trace their origins to Theodore Roosevelt's dictum that all wildlife resources are part of an integral whole, wise stewardship of those resources is a public responsibility, and science is the tool for effective discharge of that responsibility. ■

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Those who complete graduate training in wildlife often go on to use science at the highest levels. The pragmatic lessons, the critical thinking skills and the exposure to the world of policy also draw many graduates into conservation leadership. The photograph of a doctoral student is a good example. Dr. Dale Garner (Ph.D., 1995) is now Chief of Wildlife for the Iowa Department of Natural Resources.

HOW DO YOU CATCH A MOOSE?

The process is ingenious. In the Algonquin region of eastern Ontario, moose give birth to calves on islands and peninsulas, presumably to reduce the risk of predation. To catch moose, a team of wildlife biologists drives these islands and peninsulas for cows and young calves in a manner akin to a deer drive. The intent is to push the cow and calf into the water. Once in the water, the calf is easily separated from the cow by biologists in a small boat. At four to ten days old, moose calves are relatively docile and biologists pull the calf from the water, tag it and take it back to land. This draws the cow back to shore to defend her calf.

The tricky part is when the cow emerges from the water. A biologist with the dart rifle has to get a dart into the rump of the cow and the sedative has to act before the cow reaches the calf and stomps the biologists holding it. Darting takes a cool head and a dead-eye aim. Once hit with the dart, the cow generally loses control of her action within seconds and is fully sedated within a couple minutes. She is collared, a drug to reverse the sedative is administered, and she and her calf are up and moving within a few minutes.

Why would you want to?

This particular research was done to understand why moose populations were fluctuating so much. Wildlife managers were concerned about the influence of wolf and bear predation. During the study, the doctoral student radio-collared 40 cows and 40 calves. Findings showed that infestation by parasites, specifically winter tick, was more likely to be causing the fluctuations in moose populations than the predators in eastern Ontario. Thousands of ticks latch onto a single moose. In late winter, these ticks extract blood from the moose before dropping off to reproduce. The irritation of the ticks causes moose to itch, and in the process of scratching themselves on trees, they rub their fur off. If they lose enough fur, they die of hypothermia.