Voracious Anticosti deer in the crosshairs
Quebec study aims to help hunters cull island’s huge herd of whitetails and reduce their effect on a fragile ecosystem

BY MARK CARDWELL, SPECIAL TO THE GAZETTE  NOVEMBER 24, 2012

To hear big-game biologist François Lebel tell it, walking through the boreal forests that cover much of Anticosti Island can be a surreal experience.

“From the outside, they look beautiful and quite normal,” he said. “But when you walk into them, you quickly realize that there aren’t any shrubs or bushes on the ground or low branches on the trees, (so) you see really long distances. It’s very strange.”

Lebel said the lack of understory (the technical term for the area in forests where seedlings, saplings and low-growing plants live under the canopy) is a direct result of over-browsing by Odocoileus virginianus, the scientific name for white-tailed deer.

Also known as Virginia deer or simply whitetails, the medium-sized ungulates (hoofed mammals) are native to much of North and South America — but not to Anticosti Island.

Introduced on Anticosti in 1896, they have unexpectedly flourished and today number an estimated 176,000 — about 40 per cent of the entire deer population in Quebec, which is estimated at 422,000.
There are 20 whitetails for every square kilometre on the island, by far the highest density of deer anywhere in Quebec. Notably, that concentration is five times higher than in regions like the Eastern Townships, Montérégie and the Gaspé Peninsula, where large deer populations pose a hazard for drivers and cause trouble for farmers.

According to a recent Farm State Insurance study, an average of about 60,000 Canadian motorists hit a deer each year, resulting in about 50 deaths, thousands of injuries and roughly $400 million in damages. Vehicle-deer collisions also account for 90 per cent of all accidents involving wildlife.

However, on Anticosti Island — which sits in the Gulf of St. Lawrence northeast of the Gaspé Peninsula and ranks as the 20th largest island in Canada and the 90th largest on Earth — humans are the whitetails’ only predator. That’s why Lebel said he hoped that the findings and recommendations of a novel study he recently conducted on the habits of deer hunters will help to increase the harvest of whitetails on the island and reduce the animals’ impact on its ecosystem.

“The island is suffering from a very acute problem of overpopulation,” said Lebel, who works for the province’s wildlife ministry, where he leads coordination efforts of deer management across the province. “The deer are literally destroying their environment.”

Published in a recent issue of The Journal of Wildlife Management — one of the world’s leading scientific journals for wildlife science, management and conservation — Lebel’s study considered the field-level factors that influence deer hunters on Anticosti Island. He said it is the first major study that focuses exclusively on man as predator, a uniqueness that has attracted the interest of wildlife management experts around the world.

Carried out during the 2007 and ’08 hunting seasons, which are open annually on the island from Sept. 1 to Nov. 23, the study analyzed the movements and harvest-site location data from 477 hunters who agreed to carry Global Positioning System (GPS) units with them in the field and fill out post-hunt questionnaires.

Every year, 4,000-5,000 deer hunters pay up to $4,000 apiece for four- or five-day trips offered by the island’s handful of outfitters.

Sports hunting is the main economic driver on the island (commercial logging is No. 2), generating about $20 million a year and providing jobs for many of the island’s 200 residents.

Hunters participating in the study were asked to turn their GPS devices on and off at the beginning and end of each day. When activated, the units recorded their location every two and a half minutes.

Hunters were also asked to record the co-ordinates of where they shot deer and to complete questionnaires at the end of their trip to gather information about prevailing weather conditions during their stay, as well as their age, sex and years of hunting experience.

“Our objective was to study the hunters’ behaviour to help us determine the influence of habitat characteristics like the abundance of deer forage, the visibility of deer from the hunter’s viewpoint, and the accessibility territory to hunters that are associated with a successful harvest,” Lebel said.
The study found that hunting success did not relate much to weather conditions, date or hunter experience. Instead, it found that a combination of visibility and access resulted in a higher kill rate for hunters.

“Habitat types with less visual obstruction from vegetation enabled hunters to see more deer in a given day,” according to the study, which was funded by the Natural Sciences and Engineering Research Council of Canada, Quebec’s ministry of natural resources, Université Laval and the outfitters and forestry company on Anticosti Island.

“Harvested deer were located in areas with a lower density of access routes compared to areas where hunters travelled throughout the day.”

The collected data showed, for example, that roughly 80 per cent of all recorded hunter movements were within 100 metres of a driveable gravel road or a footpath — a finding similar to other studies on hunting, notably for small game and deer in some regions on the mainland. The study also concluded that increases and improvements to road networks on the island could help to increase harvest by improving accessibility and visibility to kill sites.

For sport hunting to be an effective management tool, it recommends the creation and/or remodelling of openings or clearings in and around mature and regenerating forests that are close to access roads in order to offer hunters more and better shooting possibilities.

“Managers must direct a sufficient number of hunters to the right places,” the study said. “Our results showed that modifying the environment to increase accessibility and visibility near access roads would improve harvest success. Management efforts should focus on maintaining (or creating) openings near roads and footpaths to provide hunters with a shooting distance of at least 100 metres.”

Openings in and around the roughly two dozen regenerating stands on the island would be particularly helpful, Lebel said.

The huge fenced-in enclosures, many of which are 100 square kilometres in size, were built to help protect and preserve reforested areas. The enclosures contain balsam firs, a food favourite of whitetails and a staple for winter habitat.

Balsam firs once covered Anticosti Island, said Steeve Côté, a Université Laval biology professor who specializes in the behaviour and population dynamics of large mammals and who oversaw Lebel’s study. The balsam fir decimation, however, is having a two-pronged impact on the ecosystem there.

“For one thing, it makes the deer population as a whole vulnerable to starvation and disease during the winter months,” Côté said.

It has also led, he added, to an overabundance of pine, spruce and other species of trees and plants the deer don’t eat, and which are of less commercial value.

“Anticosti Island is not a deer habitat,” Côté said. “But the deer have adapted to it and they have totally transformed the ecosystem (and) the forests in particular.”

He is leading a follow-up study aimed at identifying actions that could be taken to improve hunting success based on Lebel’s study. One is the creation of comb-cut logs, which are basically crafted
Voracious Anticosti deer in the crosshairs

shooting stands connected by tree-covered trails that allow hunters unobstructed views — and good shooting lanes — across open areas.

Côté compared the situation on Anticosti with that on British Columbia’s Queen Charlotte Islands, where deer were also introduced during the 1880s.

“It’s exactly the same thing, except there the deer are eating red cedars,” said Côté, who will travel to Japan early next year to meet with wildlife experts who are dealing with an overpopulation of sika deer on islands there.

He played down a suggestion that the most natural solution to the problem on Anticosti Island would be to introduce natural deer predators like wolves and bears.

“I’ve heard that hundreds of times,” Côté said this week. “The problem is that a few wolves soon become a lot of wolves. It would also take the island’s ecosystem 70 years to adapt. That won’t help the challenges we’re facing right now.”

Anticosti is a living laboratory for scientists and a public game reserve for sport hunters, Côté said.

“It’s a societal choice that’s been made,” he said, adding there has been little or no public criticism of activities on the island, most of which is managed by the Société des établissements de plein air du Québec.

Côté said the deer population in Quebec is quite small compared with the Northeastern U.S. states, where deer number in the tens of millions. He noted that Quebec’s 150,000 hunters bag an average of 50,000 deer a year.

“In the state of Virginia, hunters harvest more than 900,000 a year,” Côté said.

He described Lebel’s study and findings as “another important milestone on the road to managed environments like Anticosti Island.”

Greenpeace Quebec director Nicolas Mainville, who is a biologist by trade with a master’s degree in environmental science, said he doesn’t think it’s a question of bio-engineering, but strictly one of wildlife management on Anticosti Island.

“The lesson we’re learning there is that we can’t control nature. When you introduce a species, you really roll the dice as to the outcome.”

Mainville said other areas of Quebec have similar problems, like the Boucherville Islands near Montreal, where deer are rampant and no hunting is allowed. He also pointed to the Orleans Islands near Quebec City, an agricultural breadbasket where the provincial government tried, but failed, to eradicate deer two years ago by allowing a year-round hunt.

“I’ve never been to Anticosti, but from what I’ve seen and what I’ve heard, it has magnificent natural attractions (and) old-growth forests that need to be preserved. We need to maintain the ecosystem there for all Quebecers, not just hunters, loggers and oil companies.”

According to Ken Bailey, hunting editor of Outdoor Canada, Anticosti Island has a good international reputation among sports hunters — though not necessarily for the quality of the deer, which are smaller than whitetails on the mainland.
“In deer hunting circles, it’s very well known for unsurpassed densities, but not for trophy animals,” Bailey told The Gazette this week from his private deer camp near Edmonton.

According to Bailey, a National Magazine Awards winner who said he has hunted deer in every area of the country, “but for some reason not Anticosti, at least not yet,” the island is well known for the five-star service offered by its outfitters.

“They are reputed for great lodging and great food,” he said. “Hunting-wise though, it’s kind of like shooting fish in a barrel.”

Bailey also noted that the popularity of deer hunting in Canada and the U.S. is on the rise in recent years after decades of decline. He credited the proximity of deer to humans, the appeal of venison, the craftiness of deer and the abundance of the species as the principal reasons.

“They are easier to handle on the ground, too,” Bailey added. “Unlike a moose or an elk, one person can clean a deer. And venison is just outstanding, it’s a real delicacy.”

For Lebel, who is a deer hunter, helping hunters be more successful is an important tool in helping to restore and protect Anticosti Island.

“It is a unique place and a rich heritage for Quebec,” he said. “We are learning a lot about not just deer but about the challenges of managing wildlife.”

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