

## **Aerial survey of the white-tailed deer on the territory of Parc national d'Anticosti**

By Éric Savard, Head of the Conservation and Education Service, Parc national d'Anticosti,  
and Bruno Rochette, Wildlife Technician, Direction de l'aménagement de la faune de la Côte-Nord,  
Ministère des Ressources naturelles et de la Faune

In the late 19th century, Henri Menier introduced 220 white-tailed deer (*Odocoileus virginianus*) on Île d'Anticosti. Over the last century, the white-tailed deer has progressively adapted to this initially hostile habitat, so much so that today the population is evaluated at 166,000 head. The impact that this cervid can have on its habitat is major. For example, the intensive browsing of certain plant species makes their regeneration very difficult. It is therefore essential that we have an estimate of the white-tailed deer population in order to be able to monitor its evolution in relation to its habitat.

In 2001, the year in which Parc national d'Anticosti was created, an aerial survey was carried out on the island. In the summer of 2006, the Ministère des Ressources naturelles et de la Faune (MRNF) conducted a new aerial survey of the white-tailed deer on the territory of Île d'Anticosti, including that of Parc national d'Anticosti. When this survey was planned, André Gingras, a biologist with the MRNF, proposed to park management the addition of survey plots within the park's boundaries in order to be able to better evaluate the deer density inside the park.

On Île d'Anticosti, deer population surveys are generally carried out in August, the period when the colour of deer coats facilitates the detection of these animals from the air through the forest cover. The operation consists of using a helicopter to fly over, at low altitude (60 m) and at low speed (75 km/h), sample plots spread out over the entire surface being surveyed. All deer groups are counted in these plots measuring 3.5 km in length and 60 m in width.

The technique employed is known as the "double aerial survey" and requires a Bell 206 type helicopter. Two persons report their observations to the navigator who directs the pilot along the flight lines previously drawn on a map. At this stage, GPS is an invaluable tool. The information transmitted by the observers is noted on the flight maps; the number of deer observed by flight day can be impressive. The raw data of each flight day are processed using a computer program making it possible to estimate the number of deer present and to determine the level of statistical accuracy.

In 2006, a total of 76 plots were flown over within the park's boundaries. A density of 22.4 deer/km<sup>2</sup> ± 14% was evaluated there, making it possible to estimate that in the summer of 2006 there were between 11,000 and 14,600 deer in Parc national d'Anticosti. In 2001, a density of 17.5 deer/km<sup>2</sup> ± 13% had been noted for this same territory. We thus find a 28% increase between the two fly-overs. This increase is on the same order of magnitude as that calculated for the entire island (32%).

The deer density index, which we obtained during this survey, has proven to be very important. Indeed, it may be a decisive factor within the context of the annual follow-ups on wildlife and plants inside the park's boundaries. The considerable increase in the number of white-tailed deer could have a direct impact on the presence of certain species, which we will attempt to evaluate during our future research. However, such an index is not necessarily valid over the long term. Other surveys will be necessary to better document and evaluate changes in the deer population as well as their repercussions on the various ecosystems in which this population is evolving.

Other achievements:

Monitoring of a Balsam Fir – White Spruce – Eastern White Pine forest (exceptional forest ecosystem);

Survey of amphibians;

Monitoring of a special status plant (Longleaf arnica).

Photo

Bruno Rochette, MRNF