

## **Monitoring the life cycle of the northern gannet during the wintering period**

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Parc national de l'Île-Bonaventure-et-du-Rocher-Percé is taking part in a project, the aim of which is to study the ecology of the northern gannet during the winter season. The previous studies, which sought to increase knowledge about the distribution and winter movements of seabirds, relied on traditional techniques such as banding birds and at-sea monitoring activities. While limited by the nature of the methods employed, these studies provided important data. In some ways the current project has revolutionized the study of birds during the wintering period for it combines the use of electronic data sensors with chemical analyses.

Within the context of this project, we were, on the one hand, interested in the itinerary followed and the staging areas used by the northern gannet. In other words, we want to know where the birds go, when they go there and how long they stay there. The geographical information provided by the data sensors will help answer these questions.

On the other hand, the project is also interested in the characteristics of the habitat of the northern gannet, the types of prey this species consumes and the way in which it catches its prey. In addition to allowing us to determine the birds' position, the devices worn by the birds record the temperature. Some of these devices also measure the depth of dives. These two parameters make it possible to characterize the winter habitat of the northern gannet according to two aspects. First, we will be able to thermally describe the ecology of their winter habitat and secondly, evaluate their dietary habits. The latter will be inferred from the data pertaining to the depth of their dives. Blood and feather samples will be collected to determine the sex of specimens, but also to establish the chemical properties of their diet for the summer and winter seasons. A better knowledge of the diet should enable us to better define the position of the northern gannet in the food chain and to quantify the contribution of the various oceanic provinces (benthic and neretic zones) to this species' diet.

The data will come from several sites and data collection activities will span several years and involve the same birds. As a result, it will be possible to compare the itineraries of birds from different colonies with specimens from the same colony. Moreover, knowing the sex of specimens, we will be able to check for the existence of sexual dimorphism in behaviours during the wintering period. In addition, this experiment will allow us to compare different electronic equipment, as some birds will wear more than one piece of equipment produced by different manufacturers.

The presence of this large colony of northern gannets was behind the creation of Parc national de l'Île-Bonaventure-et-du-Rocher-Percé. Thanks to this ambitious project, the scope of our knowledge will increase significantly and will allow us to adjust our management practices to ensure the protection of the species. This project will also make it possible to enrich the content of our discovery activities for the benefit of the park's many visitors.