

East Canadian Light-bellied Brent Geese *Branta bernicla hrota* wintering at the Havre de Regnéville, France

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Abstract

The Havre de Regnéville, France, is a major wintering site for the East Canadian High Arctic Light-bellied Brent Goose *Branta bernicla hrota* (LBBG) population, which winters mainly on well-known and well-studied sites along the Irish coast. This wintering site has very little eelgrass *Zostera* sp. available and the geese regularly feed on saltmarshes grazed by sheep. The Conservatoire du littoral is developing several studies to provide a better understanding of why LBBG use this site and to evaluate the possible effects of climate change on its habitat. In particular, the proposed study will analyse a potential conflict of interests between biodiversity and agricultural activity in the area, to provide tools for a better coexistence between the geese and sheep feeding on the saltmarshes.

Key words: Light-Bellied Brent Goose, Havre de Regnéville, saltmarshes, sheep grazing, *Puccinellia*, *Zostera*.

Located on the west coast of the Cotentin Peninsula, northwest France, the Havre de Regnéville (49°00'N, 1°34'W) is a large estuary of high nature conservation value. It is designated as a Special Area of Conservation (SAC) under the EC Habitats Directive, as a Special Protection Area (SPA) under the EC Birds Directive, and is also protected under national legislation. With up to 1,000 individuals recorded in mid-winter (> 90% of the total number wintering in France, and c. 2% of the total population), this site is a major wintering

area for the East Canadian High Arctic Light-bellied Brent Goose (LBBG) and exceeds the threshold (1% of the total population) qualifying it as a site of international importance for the species (Table 1, Fig. 1).

Feeding conditions

While the Eastern Canadian High Arctic Light-bellied Brent Goose population feeds mainly on eelgrass *Zostera* sp. at Strangford Lough and along the Irish coast, the flock which frequents the Havre de Regnéville

Table 1. Maximum number of Light-bellied Brent Geese counted at Havre de Regnéville, and in France (R. Mahéo & S. Le Dréan-Quéneec'hdu unpubl. data, from the national wildfowl count programme).

Winter	Population total	Havre de Regnéville	% total population at Havre de Regnéville	No. in France	% total population in France
2000/01	22,779	730	3.2%	–	–
2008/09	39,399	1,200	3.0%	1,456	3.7%
2009/10	38,708	815	2.1%	1,260	3.2%
2010/11	48,002	945	2.0%	1,155	2.4%
2011/12	41,465	800	1.9%	1,707	4%

for about 7 months (October–April) only occasionally exploits Common Eelgrass *Zostera marina* beds, which are difficult to access as a result of the large (> 12 m) tidal range. The diet of the geese wintering at the site therefore consists mainly of intertidal green algae (*Enteromorpha* sp. and *Ulva* sp.) and Common Saltmarsh Grass *Puccinellia maritima*, found on grazed saltmarshes. Although similar sites are present nearby, these are frequented to a lesser extent by the geese, but regular daily flights from the Havre de Regnéville and between other sites have been observed. The reasons for the concentration of the subspecies at this single French locality is not understood, but may reflect the disturbance levels at surrounding sites as well as variation in food supply across sites in the region.

Geese, saltmarshes and their interaction with agriculture

The heavily grazed saltmarshes near Urville, on the south bank of the estuary, are

well-known for their Brent Goose concentrations, which can easily be observed from the tourist road on the opposite bank. Although *Puccinellia maritima* develops well under heavy grazing pressure, some management of grazing practices may be required to maintain and improve the saltmarsh swards and thus ensure the continued presence of geese at the site. There has been no serious conflict between geese and agriculture at the site to date, because the geese have not yet been observed feeding on inland pastures or winter cereals, but some damage or competition with agricultural activity has been claimed. For instance, up to 1,000 geese feeding on the saltmarsh, particularly during the period when the sheep have been removed from the land to allow vegetation growth, has resulted in vegetation that did not conform to the requirements of the National Institute of Origin and Quality (INAO; the organisation within the Ministry of Agriculture responsible for regulating

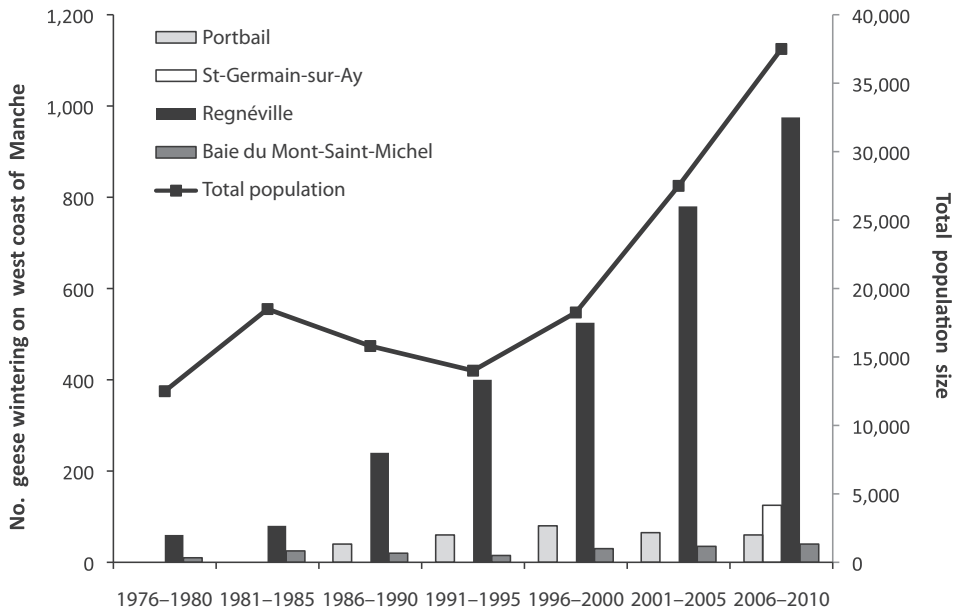


Figure 1. Number of East Canadian High Arctic Light-bellied Brent Geese wintering at sites on the west coast of Manche, France, including Havre de Regnéville (bars and y-axis scale) and the estimated total population size (line and y2-axis scale) (from Collectif 2011).

the quality and origin of agricultural products), in relation to the specifications required for “saltmarsh lambs” to qualify for “Appellation d’Origine Contrôlée” (AOC) status. The INAO explicitly cited the impact of goose-grazing on the sward as one of the reasons for the difficulty of lambs reaching the required standard. The approach initiated by the Conservatoire du littoral (www.conservatoire-du-littoral.fr), within the overall framework of preserving and enhancing the Natura 2000 site, could lead to changes in agricultural practices and experimenting with different habitat management schemes, for the benefit of both geese and sheep farmers in the region.

Scientific monitoring

Monthly counts of the geese (illustrated in Fig. 2), observations of ringed birds by local naturalists (accounting for 18–161 ring readings each winter of several hundreds of observations listed for the site in the Irish Brent Goose Research Group database; Table 2) and the activity of the regional bird association Groupe Ornithologique Normand are an essential contribution to the knowledge of the subspecies on this site. Two main conclusions can be drawn from the monitoring programmes to date: 1) numbers have increased tenfold over the past 40 years (Fig. 1), and 2) there is strong site fidelity of individual birds to the study area, as

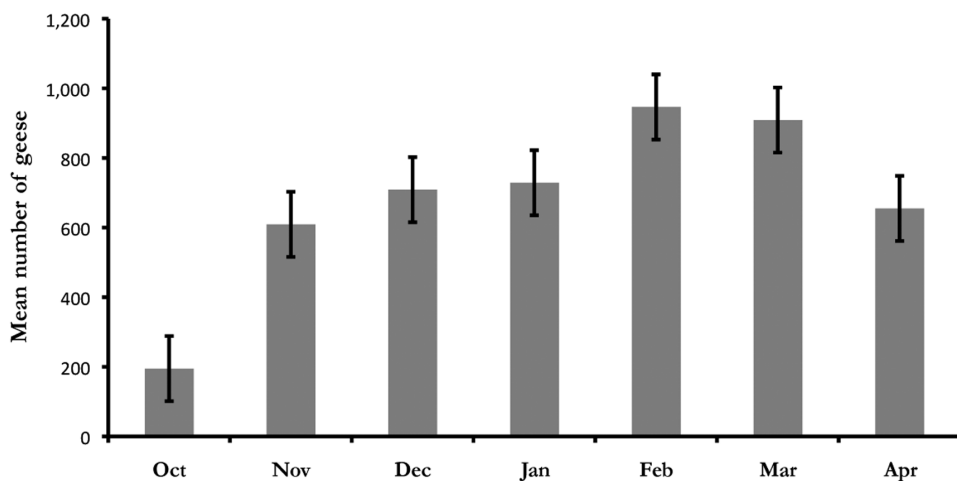


Figure 2. Mean number of geese (\pm s.e.) counted at Havre de Regnéville each month in winters 2008/09–2012/13 (R. Mahéo & S. Le Dréan-Quénez’hdu unpubl. data, from the national wildfowl count programme).

demonstrated by preliminary inspection of the re-sightings of ringed birds reported to the Irish Brent Goose Research Group (www.irishbrentgoose.org), from their LBBG ringing programme. Of 24 geese ringed between 2005 and 2008 and observed at Havre de Regnéville, 15 have frequented the site in at least four out of the last six winters (Livory 2013). Despite the international importance of the site, the presence of the geese in large numbers and their specialised diet when wintering in France, this subspecies has not been the subject of a coordinated long-term scientific study at the Havre de Regnéville. The LiCCo (Living with a Changing Coast; www.licco.eu) European project will generate new data and insights into the birds’ use of the site, and will also provide an opportunity to implement a programme of habitat conservation in association with local partners.

Under the LiCCo project, in the coming months (during 2013 and 2014), the spatio-temporal use of the saltmarsh by the geese will be studied, using observations (*e.g.* SPA atlas, international ring re-sightings and local experts’ data), habitat mapping (by LiCCo and Natura 2000), measuring consumption of *Puccinellia* exclusively by geese after the sheep have been temporarily removed, and LIDAR remote-sensing surveys. The analyses will aim to describe the use of the site by the geese, in relation to the tides and over the whole winter, according to food availability. It will describe any conflicts (*e.g.* with sheep grazing), assess disturbance levels and determine the best saltmarsh management regime favourable for LBBG conservation (by maintaining their return rates and breeding success) that is also compatible with local agricultural activity.

Table 2. Number of sightings of Light-bellied Brent Goose rings at Havre de Regnéville each year since winter 2006/07, and the number of individual (ringed) birds identified each winter (from Livory 2013).

Winter	Number of ring readings	Number of individually-ringed geese seen
2006/07	79	11
2007/08	88	15
2008/09	18	10
2009/10	54	20
2010/11	65	18
2011/12	161	26

The potential impact of sea level rises will be simulated based on the LIDAR surveys, with a view to considering the possible effect of global warming on the presence of LBBG at the Havre de Regnéville, by assessing the likelihood and consequences of habitats likely to disappear or be created as a result. More generally, the work aims to define simple and sustainable long-term approaches for the maintenance and improvement of the conservation status of the geese and the saltmarshes, and on a larger scale to assess the potential effects of climate change, whilst at the same time providing tools to assist in the management of natural habitats.

Acknowledgements

I thank the Irish Brent Goose Research Group (IBGRG) team and Vincent Schricke (ONCFS) for welcoming the launch of the study of geese wintering at the Havre de Regnéville. This note would not have been

possible without the support of Alain Livory (Manche Nature) and Eileen Rees (WWT). It has also benefited from a reading and constructive comments by Bruno Chevalier who, together with local naturalists and the Ornithological Group Normand (GONm), have developed and contributed almost all knowledge to date on the Brent Geese at the Havre de Regnéville.

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Photograph: Brent Geese flying over lambs grazing on the saltmarsh at Havre de Regnéville, by A. Guerin-Lithosphère/Conservatoire du littoral.