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Source: *Northeastern Naturalist*, Vol. 20, No. 4 (2013), pp. N14-N15

Published by: Eagle Hill Institute

Stable URL: <http://www.jstor.org/stable/43288170>

Accessed: 14-02-2018 13:35 UTC

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First records of *Lasiurus cinereus* and *L. borealis* (Chiroptera: Vespertilionidae) on Cape Breton Island, Nova Scotia, Canada

Jordi L. Segers¹, Alicia E. Irwin¹, Lesley J. Farrow¹, Laura N.L. Johnson¹, and Hugh G. Broders^{1*}

Abstract - In August 2012, a *Lasiurus cinereus* (Hoary Bat) and 2 *Lasiurus borealis* (Eastern Red Bat) were netted near Donkin, Cape Breton Island, NS, Canada. Acoustic studies showed the presence of Hoary Bats on at least 3 nights and Eastern Red Bats on at least 16 nights, over a 32-night-long survey starting on 21 August 2012. These records are the first for both species on Cape Breton Island, and significantly extend the known distribution of Eastern Red Bats.

Cape Breton Island lies less than 1 km off the east coast of mainland Nova Scotia, Canada, in the Acadian forest ecoregion (Davis and Browne 1996). Seven bat species have been recorded in Nova Scotia (Broders et al. 2003, Van Zyll de Jong 1985). There are 3 long-distance migratory bats: *Lasiurus borealis* (Müller) (Eastern Red Bat), *Lasiurus cinereus* (Palisot de Beauvois) (Hoary Bat), and *Lasionycteris noctivagans* (Le Conte) (Silver-haired Bat). Four are short-distance migratory species: *Myotis lucifugus* (Le Conte) (Little Brown Bat), *Myotis septentrionalis* (Trouessart) (Northern Long-eared Bat), *Eptesicus fuscus* (Palisot de Beauvois) (Big Brown Bat), and *Perimyotis subflavus* (Cuvier) (Tricolored Bat). Only Little Brown Bats and Northern Long-eared Bats are abundant throughout the province and were the only species of bat known to occur on Cape Breton Island prior to this study (Broders et al. 2003, Van Zyll de Jong 1985).

On 20 and 22 August 2012, two Eastern Red Bats and one Hoary Bat were captured near the opening to an abandoned coal mine located east of the town of Donkin, Cape Breton Island, NS (46°11'N, 59°52'W). All 3 bats were male, and were captured in mist nets set in a 30-m by 150-m clearing within a coastal coniferous woodland. Both Eastern Red Bats were netted near the forest edge (20 August, 2340 h, 46°10.858'N, 59°51.251'W; 22 August, 2215 h, 46°10.850'N, 59°51.229'W), whereas the Hoary Bat was netted in the center of the clearing (22 August, 2315 h, 46°10.861'N 59°51.255'W). Five Northern Long-eared Bats and 1 Little Brown Bat also were netted during the same survey; a subsequent survey on 6–7 September 2012 did not result in additional captures of any species of bat.

Bat activity at the study site also was acoustically monitored using 1–3 ultrasonic recorders (SM2BAT, Wildlife Acoustics, Concord, MA) per night, over 32 nights from 21 August–21 September 2012. More than 96% of the 29,558 recorded sequences were classified as either the Little Brown Bat or Northern Long-eared Bat. However, there were 263 sequences identified as Hoary Bats on 3 non-consecutive nights, and 311 sequences identified as Eastern Red Bats on 16 non-consecutive nights. These acoustic data suggest it is likely that a greater number of bats used the site during late summer than just the 3 captured individuals.

The Hoary Bat is the most widespread species of bat in North America (Shump and Shump 1982). However, barring a single record of a Hoary Bat in St. Johns, NL, Canada (Maunder 1988) and 2 records of Hoary Bats from Iceland (Hayman 1958), the eastern extent of the geographic range of both the Hoary Bat and the Eastern Red Bat is mainland Nova Scotia (Van Zyll de Jong 1985). Donkin is located along the Atlantic coast, at the northeastern edge of Cape Breton Island, about 130 km northeast of mainland Nova Scotia.

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J.L. Segers, A.E. Irwin, L.J. Farrow, L.N.L. Johnson, and Hugh G. Broders

Thus, our captures represent the most easterly records of the Eastern Red Bat on the continent and the first records of both the Hoary Bat and the Red Bat on Cape Breton Island.

Lucas and Hebda (2011) summarized previous records of these long-distance migratory species from the province and showed that most records occurred in late summer and fall. Broders et al. (2003) described spatial and temporal patterns of activity of bats in southwest Nova Scotia and found that only 0.02% of acoustically measured activity was attributable to long-distance migrants, indicating no significant migratory activity by these bats. In addition, extensive acoustic and capture surveys throughout mainland Nova Scotia, southern New Brunswick, and Prince Edward Island over the last 13 years indicated that these species were uncommon; for example, none of the >8000 captures was either an Eastern Red Bat or Hoary Bat (H.G. Broders, unpubl. data).

Together, these data support the contention that there is no significant summering population of these long-distance migrants in Nova Scotia, although some individuals migrate through the province each fall. Long-distance migratory bats may use the coastline of Cape Breton during their fall migration, but where these bats summer is unknown. Further investigation is needed to understand fully the patterns of activity of long-distance migratory bats on Cape Breton Island.

Acknowledgments. We thank Public Works and Government Services Canada for showing us the field site and providing us with background information, funding, and field assistance. We also wish to thank Mrs. Nicholson for allowing access to her land.

Literature Cited

- Broders, H.G., G.M. Quinn, and G.J. Forbes. 2003. Species status, and the spatial and temporal patterns of activity of bats in southwest Nova Scotia, Canada. *Northeastern Naturalist* 10:383–398.
- Davis, D.S., and S. Browne. 1996. *The Natural History of Nova Scotia. Volume One: Topics and Habitats.* Nova Scotia Museum of Natural History and Nimbus Publishers, Halifax, NS, Canada.
- Hayman, R.W. 1959. American bats reported in Iceland. *Journal of Mammalogy* 40:245–246.
- Lucas, Z., and A. Hebda. 2011. Lasiurine bats in Nova Scotia. *Proceedings of the Nova Scotian Institute of Science* 46:117–137.
- Maunder, J.E. 1988. First Newfoundland record of the Hoary Bat, *Lasiurus cinereus*, with a discussion of other records of migratory tree bats in Atlantic Canada. *The Canadian Field-Naturalist* 102:726–728.
- Shump, K.A., Jr., and A.U. Shump. 1982. *Lasiurus cinereus*. *Mammalian Species* 185:1–5.
- Van Zyll de Jong, C.G. 1985. *Handbook of Canadian Mammals: 2. Bats.* National Museum of Canada, Ottawa, ON, Canada.