

Note

Second Report of the Gray Fox, *Urocyon cinereoargenteus*, in New Brunswick

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McAlpine, Donald F., Jonathan Cormier, and Isaac G. MacLean. 2016. Second report of the Gray Fox, *Urocyon cinereoargenteus*, in New Brunswick. *Canadian Field-Naturalist* 130(2): 164–166.

The Gray Fox, *Urocyon cinereoargenteus*, is listed federally as a threatened species in Canada, but has been undergoing a range expansion, with the first New Brunswick occurrence recorded in 2007. Here we document a second recent New Brunswick occurrence (2014) and suggest that monitoring the species in the province may be warranted.

Key Words: Gray Fox; *Urocyon cinereoargenteus*; conservation; dispersal; range expansion

Zooarchaeological evidence demonstrates that during the Uren Middle Iroquoian stage (1300–1350 AD; see Dodd *et al.* 1990) the Gray Fox, *Urocyon cinereoargenteus*, reached the northern limit of a wide North American distribution in southern Ontario (Wintemberg 1921). However, by the time of European colonization of North America, the Gray Fox had essentially disappeared from Canada as a resident breeding mammal. It has been suggested that the species range contracted because of deforestation during the early European settlement period or cooling of the climate that lasted from about 1500 to 1850 (the Little Ice Age; Bozarth *et al.* 2011). However, since 1930–40, the Gray Fox has been undergoing a range expansion, possibly in response to warming climate and forest changes that have provided suitable habitat (Palmer 1956; Judge and Haviernick 2002; Bozarth *et al.* 2011). Reduced winter snowfall has also been suggested as a factor encouraging Gray Fox expansion along the northern margin of its range (Jolicoeur *et al.* 2011).

In Canada, as recently as 2002, it was suggested that the Gray Fox was limited as a resident breeding mammal to Pelee Island, Ontario, with a small number of dispersing animals from the United States recorded in southeastern Manitoba and southern Ontario (COSEWIC 2002). There is a single anomalous report from northern Alberta (Moore 1952).

The first Gray Fox from New Brunswick was reported in the southwest of the province in 2007, about 135 km northeast of Bangor. This is the region from which the most northerly Gray Fox sightings in Maine were known at that time (McAlpine *et al.* 2008). Recent evidence suggests a small, but increasing, number of Gray Fox in Ontario and Quebec (Jolicoeur *et al.* 2011; Van den Broeck, personal communication) and Manitoba (Dean Berezanski, personal communication), with

breeding now likely in the Rainy River-Thunder Bay region of northwestern Ontario (COSEWIC 2015; Van den Broeck, personal communication), in addition to Pelee Island. Here we document a second report of the Gray Fox in New Brunswick.

On 19 September 2014, using a motion activated infrared camera, IGM recorded a single Gray Fox inspecting an apple-flavoured salt lick placed on a stump at the north end of Oromocto Lake, York County, New Brunswick (45.6455°N, 67.0102°W). The location is about 36 km north of the previous New Brunswick Gray Fox sighting near Rolling Dam, Charlotte County, and 123 km east of Lincoln, Maine, the site of a March 2013 Gray Fox occurrence also captured on a trail cam and reported in the media (Holyoke 2013). A still photograph taken from a 16-s segment of the New Brunswick video (02:52:18–02:52:34; Figure 1) shows the dark muzzle, dark dorsal stripe, dark tail tip, and relatively short legs characteristic of the species (Naughton 2012). The area includes a mosaic of 30-year-old mixed forest dominated by fir (*Abies* sp.) and birch (*Betula* sp.), more recent cutovers, hay fields, and rural residences and farms. Oromocto Lake is about 600 m distant from the trail cam site.

In 2002 it was estimated, with little supporting data, that the Canadian population of the Gray Fox consisted of 30–250 mature individuals (COSEWIC 2002). Although no current reliable population estimates exist, it is now suggested that fewer than 110 mature individual Gray Fox are present in Canada (COSEWIC 2015). Accordingly, the species continues to be ranked as threatened in Canada (COSEWIC 2015), and NatureServe has ranked this species as critically imperilled (N1) in Canada. COSEWIC (2015) suggests that it is mortality from trapping that is likely preventing the establishment of breeding subpopulations of the Gray



FIGURE 1. Still photograph extracted from a 16-s video of a Gray Fox, *Urocyon cinereoargenteus*, at the north end of Oromocto Lake, York County, New Brunswick, on 19 September 2014. Arrows mark the dark muzzle and tail tip characteristic of the species. Photo: I. G. MacLean.

Fox in much of the Canadian range outside Pelee Island. The Gray Fox is not currently considered to be a native New Brunswick furbearer; hence the New Brunswick Fish and Wildlife Act refers only to “fox”. New Brunswick regulations for harvest of Red Fox (*Vulpes vulpes*) therefore, unintentionally, include the Gray Fox. Although listed as threatened under the Ontario Species-at-Risk Act, the Gray Fox receives no specific protection in Manitoba or New Brunswick, probably because of its perceived vagrant or “occasional” status in these latter jurisdictions (COSEWIC 2015). Trapping and hunting of the species is prohibited in Quebec, but the Gray Fox has no designated conservation status in that province. Nonetheless, Jolicoeur *et al.* (2011) acknowledge that the species is expanding its range in Quebec and that there is a need to monitor it there. The 2 recent occurrences of the Gray Fox in New Brunswick suggest that monitoring in New Brunswick may also be warranted.

Acknowledgements

Dean Berezanski (Manitoba Conservation and Water Stewardship) and John Van den Broeck (Ontario Ministry of Natural Resources) kindly provided information on the status of recent Gray Fox occurrences in their jurisdictions. The COSEWIC Secretariat generously provided access to the 2015 COSEWIC report on the Gray Fox while the status report was in press. Graham Forbes, Jennie Pearce, Dwayne Sabine, and Mary Sabine all provided useful comments on the manuscript.

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Received 30 March 2015

Accepted 14 March 2016