

Evidence for the Historical Occurrence of Wolves (*Canis* spp.) in Nova Scotia, Canada

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Whitaker, Andrei N., and Karen F. Beazley. 2017. Evidence for the historical occurrence of wolves (*Canis* spp.) in Nova Scotia, Canada. *Canadian Field-Naturalist* 131(1): 32–36. <https://doi.org/10.22621/cfn.v131i1.1775>

Although once common across the entire North American continent, wolves (*Canis* spp.) have been extirpated from most of their former territory. The historical occurrence and persistence of wolves in Nova Scotia has been a subject of debate because of comments on the wolf's rarity in early settler accounts and the absence of physical specimens. By consulting historical documents of European settlers, the Mi'kmaw lexicon, and fur trade records, we found evidence for the presence of a wolf population in Nova Scotia (which included the territory of New Brunswick before 1784) at European contact and persisting until the early 20th century.

Key Words: Historical distribution; wolves; *Canis lycaon*; *Canis lupus*; anecdotal evidence; Maritime Provinces

Introduction

The story of the wolf (*Canis* spp.) in North America is inextricably linked to the story of European colonization. As settlers displaced and replaced wild ungulates and other prey, wolves turned to the herds of colonial livestock as a food source (McIntyre 1995; Steinhart 1996). As colonists relied heavily on their stock for survival, they implemented a bounty system to try to eliminate the wolf from areas surrounding their settlements (McIntyre 1995; Steinhart 1996; Robinson 2001). The bounties, coupled with overall habitat degradation from human expansion and resource development, caused the wolf to be eradicated from roughly half its range, including the Canadian Maritime Provinces, by the middle of the 20th century (Carbyn 1987). It is believed wolves were eliminated from the Maritime Provinces sometime within the last quarter of the 19th century (Smith 1940; Carbyn 1987; Hayes and Gunson 1995; Lohr and Ballard 1996), although estimates of the timing vary from the mid-1860s (Gilpin 1867; Ganong 1908) to the early 20th century (Sheldon 1936).

The taxonomy of wolves in eastern North America is controversial. The wolf species that inhabited eastern Canada and the northeastern United States is generally known as the Eastern Wolf or the Eastern Timber Wolf (*Canis lycaon*) and also as the subspecies *C. lupus lycaon* (Nowak 1983, 1995; Rutledge *et al.* 2012). However, it is difficult to conclude whether *C. lycaon*, *C. lupus*, or subspecies of the latter inhabited the region because of the absence of physical specimens. Although it is certain that past canids were not Coyotes (*C. latrans*), which were not resident in the Maritime Provinces until the 1960s (Forbes *et al.* 2010), the taxonomic identity of the wolf that historically occurred in Nova Scotia is unclear.

While wolves were historically documented in the region, some authors have questioned whether the Maritimes supported a self-sustaining population (Ganong 1908; Lohr and Ballard 1996); based on comments in early settler accounts on the wolf's rarity, some have even doubted the existence of a resident wolf population in Nova Scotia altogether (Dodds *et al.* n.d.). In this study, we investigated European settler accounts, Mi'kmaw evidence, and fur trade records to determine the grounds for a historical Nova Scotian wolf population.

Methods

We conducted a literature search to find evidence of wolves in historical documents pertaining to Nova Scotia (Figure 1), which, until 1784, included the territory that became New Brunswick. As Nova Scotia was occupied by the Mi'kmaq, French, and English, there are historical accounts in all three languages; however, only original English documents and those translated into English were consulted. This limitation poses the risk of excluding important Mi'kmaw and French sources and is, thus, likely to result in a conservative account of wolf presence. In addition to the literature search, we also examined trapping statistics from the Dominion Bureau of Statistics (now Statistics Canada) and fur trade reports from the United Kingdom and the French settlement of Louisburg (an important shipping port on Cape Breton Island, Nova Scotia, during the period of French occupation and rule).

Results and Discussion

Evidence from the Mi'kmaq

The earliest evidence for the existence of wolves in Nova Scotia is found in the folklore and cultural history

A contribution towards the cost of this publication has been provided by the Thomas Manning Memorial Fund of the Ottawa Field-Naturalists' Club.

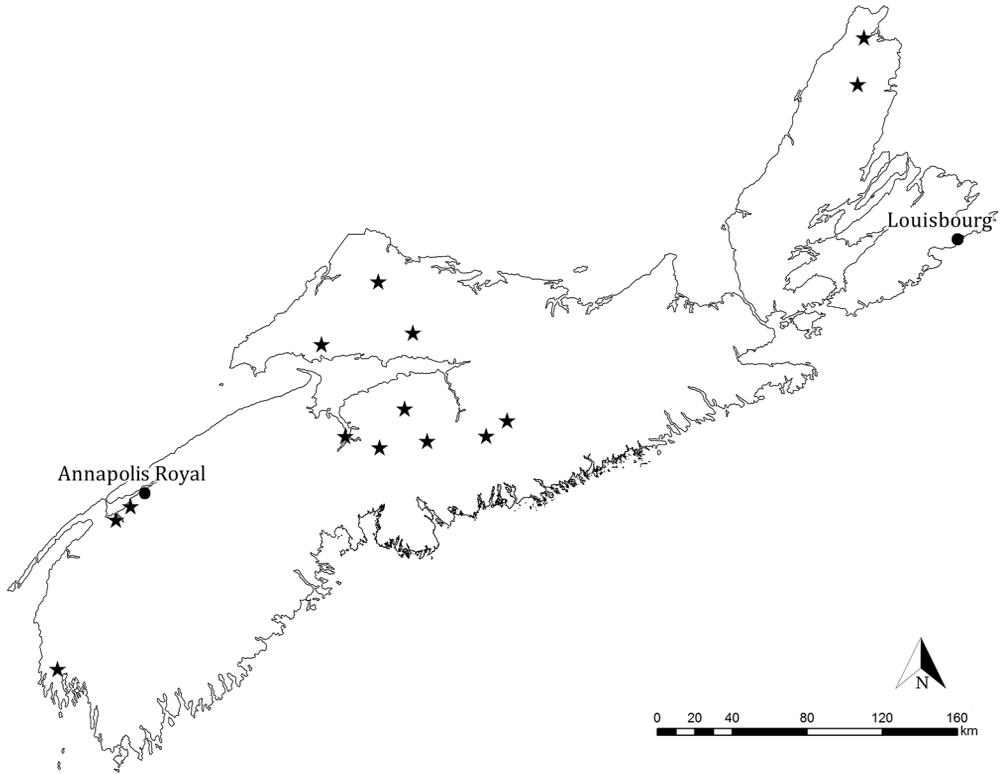


FIGURE 1. Historical occurrences of wolves (stars) in the area of the present-day province of Nova Scotia, as recorded in literary sources, 1606–1905.

of the Mi'kmaq. Archaeological digs at pre-contact Mi'kmaq sites in eastern Nova Scotia have yielded wolf remains (Ricker 1997). The early Mi'kmaq lexicographer, Reverend Silas T. Rand, gives the Mi'kmaq word for wolf as “böktüsüm” (Rand 1875, 1888) and notes that the language had an adjective, “böktüsümoo”, for describing someone or something as wolfish (Rand 1888). The wolf is also present in Mi'kmaq legends, often portrayed as a companion to the guardian Gluskap (Hardy 1855a; Rand 1894; Wallis and Wallis 1995).

Evidence from Settlers

The wolf is mentioned in writings from the beginning of French settlement in what is now Nova Scotia, in the Port Royal/Annapolis Royal region (Lescarbot 1609, 1914). In 1609, Lescarbot described wolves as being present in the region and noted that a neighbouring chief's name carried the meaning of wolf (Lescarbot 1914). When describing the food habits of the native population, he observed “[a]s for beasts of the woods they eat all of them, the wolfe excepted [sic]” (Lescarbot 1609: 212) and stated “I will not fstand to fpeake of woolues (for they haue fome, and yet eat none of them) [sic]” (Lescarbot 1609: 255). Soon after the French settled at Port Royal (now Annapolis Royal),

Jesuit missionaries were sent to New France (now Nova Scotia). In a letter of 1612, Father Biard made reference to the occurrence of the wolves around Port Royal while remarking upon the language gap between the Europeans and the local Mi'kmaq, writing, “They will name to you a wolf, a fox, a squirrel, a moose, and so on to every kind of animal they have” (Biard 1896: 11).

In 1794, the concern over wolves harassing sheep was great enough for a bill to be passed in the provincial legislature promoting their elimination (Table 1; 34 Geo III c II). Then, two years later, another Act was passed to encourage the destruction of wolves and other predators in response to damages they had wrought (Table 1; 36 Geo III c XVII). This Act was resurrected again in 1801 because of the continuing harm these animals were causing to livestock in Nova Scotia (Table 1; 41 Geo III c VII).

Sir George Head (1829: 42) reported that in Nova Scotia “wolves... are in sufficient numbers through all parts of the forests”. Gesner (1847, 1849) writes that in the mid-1840s wolves were seen near Halifax and captured in the neighbourhoods of Windsor and Musquodoboit. At roughly the same time, Gilpin (1867: 12) observed that wolves were “in every part of the province... from north to the extreme south”. In 1845, wolf

TABLE 1. Nova Scotia legislation promoting wolf bounties, 1794–1851.

Year	Duration	Title of Statute
1794	None stated	<i>An Act for the preservation of Sheep</i> , S.N.S. 1794 (34 Geo III), c II
1796	July 1 1797	<i>An Act to encourage the killing of Wolves, Bears, Loup Cerviers, and Wild Cats</i> , S.N.S. 1796 (36 Geo III), c XVII
1801	Three years	<i>An Act to revive, and continue, an Act made in the thirty-sixth year of his Majesty's reign, entitled, An Act to encourage the killing of Wolves, Bears, Loup Cerviers, and Wild Cats</i> , S.N.S. 1801 (41 Geo III), c VII
1845	None stated	<i>An Act to encourage the Killing of Wolves</i> , S.N.S. 1845 (8 Vic), c XLVII
1846	None stated	<i>An Act to amend the Act to encourage the Killing of Wolves</i> , S.N.S. 1846 (9 Vic), c XVII
1851	Repealed by 1884	<i>Of The Destruction of Noxious Animals</i> , R.S.N.S. 1951 (14 Vic), c 93

bounties were revived by the province after a 40 year absence (Table 1; 8 Vic c XLVII) and continued to the latter years of the century. In 1885, the authority for granting wolf bounties was transferred from the province to the municipalities (*An Act to amend Chapter 56 of the Revised Statutes, Fifth Series, "Of County Incorporations"*, S.N.S. 1885 c 13).

Evidence from Fur Trade Records

Trade in wolf skins is first mentioned in the sparse importation accounts, present only from a few years in the early 1740s, of the French colony of Louisbourg on Cape Breton Island. Between 1740 and 1743, 22 wolf pelts were brought into Louisbourg from Nova Scotia (Gwyn 2003). As this number reflects only pelts brought to Louisbourg on trading ships, it is likely that the number of wolf skins traded at the fort during this period was higher (K. Donovan, personal communication, 2006). In addition, the account books from suppliers Simonds and White from the area surrounding the Saint John River, New Brunswick, also list "two Nova

Scotia wolf" among the furs traded southward from 1764 to 1774 (Raymond 1943: 158).

The Nova Scotia fur trade also extended across the Atlantic to the United Kingdom. The London Custom House records show that the first wolf pelt from Nova Scotia was exported in 1753. From this year onward, wolf skins were steadily exported until 1867, the last year they are recorded. All in all, 1368 wolf skins were sent to England from Nova Scotia, for an average of 12 a year over 114 years (Table 2). Of these, only 10 wolf skins were exported during the period when New Brunswick was part of Nova Scotia (until 1784).

The final mention of the wolf is in the annual reports that the Dominion Bureau of Statistics began to publish after 1919. A total of 18 wolves were reported to be trapped in Nova Scotia in the 1919–20 season, and a further 10 wolves were harvested in 1920–21 (Novak *et al.* 1987). No more wolves were trapped until the 1927–28 season, when a single wolf was collected; after this, no further wolves are reported from Nova Scotia (Novak *et al.* 1987).

TABLE 2. Records of wolf pelts exported from Nova Scotia and Cape Breton to the United Kingdom, 1745–1870.*

Year	No. pelts	Year	No. pelts	Year	No. pelts
1753	2	1801	2	1846	4
1754	2	1805	29	1847	52
1763	1	1809	3	1848	23
1777	1	1816	24	1851	2
1782	4	1817	80	1852	2
1785	1	1818	1	1853	2
1787	1	1819	66	1854	2
1789	2	1820	1	1855	23
1790	1	1822	344	1856	15
1791	1	1830	1	1859	200
1792	1	1831	13	1862	1
1793	5	1834	1	1863	89
1794	1	1837	2	1864	83
1795	1	1838	3	1865	20
1797	4	1840	6	1866	124
1800	1	1844	1	1867	120

Source: Inspector-General's Ledgers of Imports and Exports housed in the National Archives, Kew, England. Information retrieved by Dr. Julian Gwyn. In chronological order, the ledgers consulted were: CUST3/53, 3/54, 3/63, 3/77, 17/7, 17/8, 17/9, 17/10, 17/11, 17/12, 17/13, 17/14, 17/15, 17/16, 17/18, 17/22, 17/26, 17/30, 5/4, 5/5, 5/6, 5/7, 5/8, 5/10, 5/19, 5/20, 5/23, 5/26, 5/27, 5/29, 5/33, 5/35, 5/37, 5/39, 5/45, 5/47, 5/49, 5/51, 5/53, 5/61, 5/67, 5/69, 5/73, 5/77, 5/83, 5/89.

*1813 data are missing as the London Custom House burned down that year and no trade data survived. Between 1757 and 1761, there were no fur exports from Nova Scotia to England. Until 1784, data may include furs from the territory that became New Brunswick.

Conclusion

Although early naturalists observed that wolves were found across the entire North American continent, a few 19th century writers believed that the wolf was not a resident species in the Canadian Maritimes region (Lohr and Ballard 1996). Gesner (1847) and Levinge (1846) claimed that wolves first entered New Brunswick in the 1800s in pursuit of White-tailed Deer (*Odocoileus virginianus*), and Gesner (1849) claimed that the wolf was not part of the “native” fauna of Nova Scotia. Hardy (1855b: 51) echoed this viewpoint when he noted that the wolf had “but lately made his appearance in Nova Scotia”, as did Duvar (1867: 63) when he wrote that wolves in Nova Scotia were “rare visitor[s] from the adjoining province of New Brunswick”.

The belief that wolves migrated into the province during the 19th century may have been related to a probable increase in wolf–human interactions that occurred in the same period. The human population of Nova Scotia rose from 12 000 in 1781 to 350 000 in 1867 (Gesner 1849), which may have decreased the available habitat and prey populations for wolves, while increasing the likelihood of wolf observations through human expansion into former wolf territory. Our investigation shows that not only was the wolf present in Nova Scotia during the beginning of European settlement, but also that the animal was not extirpated until the 1920s. Although the evidence cannot tell us an overall population size, it does show that a persistent population of wolves did exist in Nova Scotia until the first quarter of the 20th century.

Acknowledgements

We thank J. Gwyn for information pertaining to the historical trade of wolf pelts from Nova Scotia and for generously providing personally retrieved data from England on Nova Scotia’s fur trade with the United Kingdom. We also thank K. Donovan (Fortress of Louisbourg National Historic Site) for sharing his knowledge of 18th century fur trade at Louisbourg. S. Toni contributed to the editing of this paper. Finally, we thank D. McAlpine, B. Patterson, and G. Forbes for guidance on wolf nomenclature.

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Received 8 February 2016

Accepted 30 January 2017