

Note

Behaviour of a porcupine (*Erethizon dorsatum*) swimming across a small boreal stream

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Jung, T.S. 2019. Behaviour of a porcupine (*Erethizon dorsatum*) swimming across a small boreal stream. Canadian Field-Naturalist 133(1): 25–27. <https://doi.org/10.22621/cfn.v133i1.2107>

Abstract

The swimming behaviour of North American Porcupine (*Erethizon dorsatum*) is largely unrecorded, even though much of its habitat is bisected by innumerable rivers and streams. Moreover, the literature is inconsistent regarding how readily porcupines take to the water and how well adapted they are for swimming. I observed a porcupine swimming across a relatively placid and shallow braid in the Klondike River (Yukon, Canada), after it had aborted three apparent attempts to swim at a relatively fast-flowing, deep channel upstream. This observation provides evidence of porcupine swimming across moving water and suggests that they may be reluctant to do so and selective of where they cross rivers and streams.

Key words: Behaviour; *Erethizon dorsatum*; North American Porcupine; swimming

Observations of North American Porcupine (*Erethizon dorsatum*) swimming are rare in the literature, suggesting that it may be uncommon behaviour. Yet, much of their range is within the boreal forest (Woods 1973; Roze and Ilse 2003), which is interspersed and divided by numerous water bodies. The few observations reported involve swimming in ponds and lakes (Dean 1950; Woods 1973; Roze 2009), with no observations of them crossing rivers or streams. An unusual observation of a Bull Trout (*Salvelinus confluentus*) embedded with porcupine quills provided circumstantial evidence of a porcupine swimming in moving water (Cott and Mochnacz 2007).

The willingness of porcupines to swim is unclear, particularly across rivers and streams. Some authorities suggest that porcupines are not averse to swimming (Roze and Ilse 2003; Roze 2009), and that swimming is an important means for them to access seasonal food resources. For instance, there are observations of porcupines feeding on water lilies (Nymphaeaceae) in shallow ponds and swimming to retrieve food items that they then bring to shore to consume (Dean 1950; Roze and Ilse 2003). Moreover, their quills may also be adapted, in part, to help them swim; specifically, Roze and Ilse (2003: 376) surmised that “their watertight, sponge-filled interiors aid in floatation, enhancing the porcupine’s

swimming capabilities”. Alternatively, Woods (1973: 4) opined that “they do not like to swim”, although he conceded that they have been observed crossing small water bodies. In an early “experiment”, Murie (1926: 112) noted:

One day I tried to make a porcupine swim across a narrow stream. I shoved it toward the water with a stick and intercepted it whichever way it turned. Nothing could induce it to swim, although I almost shoved it bodily into the water. It came straight toward me, rather than cross the stream, and I finally gave up the attempt.

Here, I provide an observation of a porcupine swimming across a small boreal stream and note its apparent indecision in doing so.

While angling on a braid of the Klondike River, ~15 km east of Dawson City, Yukon, Canada (64.059°N, 139.433°W), I observed a porcupine approaching and, eventually, swimming across the river. At approximately 1705 Pacific Daylight Time, on 6 July 2018, an apparently full-grown porcupine emerged from tall shrubs on the far side of the stream. I did not know its age or sex. The porcupine came to the shore (point A in Figure 1) and, after about 15 s of apparently sniffing toward the far shore, it stepped about 30 cm into the stream, immersing its front



FIGURE 1. Photograph of the site where a North American Porcupine (*Erethizon dorsatum*) swam across a braid in the Klondike River, Yukon, Canada. At sites A, B, and C, the porcupine stepped into the stream but did not cross it; the dashed line (D) indicates where it swam across the stream. Photo: T.S. Jung.

legs. However, rather than swim across the stream, it backed out of the water and sniffed across the stream again. It immediately moved about 6 m downstream and repeated the same actions at point B (Figure 1). The porcupine moved another 15 m downstream along the shore to point C (Figure 1) and again entered the stream, this time without apparently sniffing the far shore, and it waded deeper until its belly and both legs were under water; however, it again returned to the shore within approximately 30 s. The porcupine then moved into the shrubs and was not seen for about 5 minutes. I then observed it ~35 m downstream of point C, at point D (Figure 1), where it entered the water and swam across the stream, after standing in the stream with both legs and its belly under the water for about 1 minute. The porcupine reached the far shore after swimming for about 2 minutes, and then entered the forest on the other bank and was no longer observed.

I do not know why the porcupine crossed the stream. It was on a small island in the Klondike River that was largely covered with willow (*Salix* spp.) and alder (*Alnus* spp.), whereas, the other side of the stream was covered by mature boreal forest, dominated by Balsam Poplar (*Populus balsamifera* L.) and White Spruce (*Picea glauca* [Moench] Voss) trees. It may have been attracted to something not available on the island at that time.

Points A–C, where the porcupine entered the stream but did not cross it, were in the section of the stream with the swiftest water and a relatively deep channel (~1.2 m deep). In contrast, point D (Figure 1),

where the porcupine entered and crossed the stream, was immediately downstream of the riffle, and the water there was more placid and only about 0.5 m deep. However, the stream here was about 30 m wide, compared to about 8 m wide at the riffle (points A–C). It appeared that the porcupine was hesitant to enter the stream and cross the riffle and selected a location to cross where the stream was comparatively slow flowing. This observation suggests that porcupines may not be strong swimmers and seek areas with slow-moving water to cross rivers and streams.

This observation is of scientific value from two perspectives. First, to the best of my knowledge, this is the first record of a porcupine crossing a stream or river, despite the fact that this must be relatively common behaviour for porcupines given the innumerable streams and rivers in the boreal forest, even if it is not regularly observed by humans. Second, given the apparent indecision of the animal about whether to cross the stream, this observation suggests that some porcupines may be averse to swimming, supporting the assertion of Woods (1973). In addition, this observation suggests that porcupines may be selective in terms of where they cross rivers and streams, avoiding deep, turbulent water in favour of more placid and shallow sections. Although the porcupine swam across the stream with apparent ease, its head and body were quite low in the water; thus, waves and riffles may pose a substantial risk of drowning. A swift current could also quickly take a porcupine downstream during a crossing into hazards, such as rough water or waterfalls.

Acknowledgements

Dwayne Lepitzki, Garth Mowat, and an anonymous reviewer kindly provided comments that improved this manuscript.

Literature Cited

- Cott, P.A., and N.J. Mochnacz.** 2007. Bull trout, *Salvelinus confluentus*, and North American porcupine, *Erethizon dorsatum*, interaction in the Mackenzie Mountains, Northwest Territories. *Canadian Field-Naturalist* 121: 438–439. <https://doi.org/10.22621/cfn.v121i4.523>
- Dean, H.J.** 1950. Porcupine swims for food. *Journal of Mammalogy* 31: 94.
- Murie, O.J.** 1926. The porcupine in northern Alaska. *Journal of Mammalogy* 7: 109–113.
- Roze, U.** 2009. *The North American Porcupine*. Second Edition. Cornell University Press, Ithaca, New York, USA.
- Roze, U., and L.M. Ilse.** 2003. Porcupine, *Erethizon dorsatum*. Pages 371–380 in *Wild Mammals of North America: Biology, Management, and Conservation*. Second Edition. Edited by G.A. Feldhamer, B.C. Thompson, and J.A. Chapman. The John Hopkins University Press, Baltimore, Maryland, USA.
- Woods, C.A.** 1973. *Erethizon dorsatum*. *Mammalian Species* 29: 1–6.

Received 16 July 2018

Accepted 7 February 2019