

Swimming in the Northern Tamandua (*Tamandua mexicana*) in Panama

Authors: Esser, Helen, Brown, Danielle, and Liefting, Yorick

Source: *Edentata*, 11(1) : 70-72

Published By: IUCN/SSC Anteater, Sloth and Armadillo Specialist Group

URL: <https://doi.org/10.1896/020.011.0112>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Swimming in the Northern Tamandua (*Tamandua mexicana*) in Panama

Helen Esser
Danielle Brown
Yorick Liefting

Abstract

The ability to swim has been well documented in many species of the order Xenarthra but the literature implies that wild *Tamandua* anteaters avoid the water. On 26 January 2010, while driving a boat across the Panama Canal (9°10'40"N, 79°50'01"W), the authors witnessed an adult *T. mexicana* swimming 120 m offshore, in a straight line towards Barro Colorado Island, still 280 m away. The tamandua was swimming without any difficulty and its choice of crossing the canal at a very narrow point suggests that the animal had knowledge of the topography. It is very likely that other crossing points exist and that there is regular exchange between populations of tamanduas living on the mainland and the island, as is the case with other mammals.

Keywords: *Tamandua mexicana*, Panama Canal, Barro Colorado Island, swimming, anteater

Swimming has been well documented in a number of xenarthran species, including giant anteaters (*Myrmecophaga tridactyla*; da Silveira, 1968; Montgomery, 1985; Nowak, 1999), sloths (*Bradypus variegatus* and *Choloepus hoffmanni*; Beebe, 1926; Anderson and Handley, 2001) and some armadillos (*Dasyppus* spp.; Moeller, 1975) but the literature implies that wild *Tamandua* anteaters avoid the water (Montgomery, 1985; Eisenberg, 1989; Rodrigues *et al.*, 2001). Northern tamanduas (*Tamandua mexicana*) have been studied primarily on Barro Colorado Island (9°09'N, 79°51'W), a 1562-ha hilltop in Gatun Lake in central Panama (da Silveira, 1968; Montgomery and Lubin, 1977). The island was formed by the damming of the Chagres River that created the Panama Canal in 1912 (Dietrich *et al.*, 1982) and is separated from the surrounding mainland by 200–1000 m, so that island populations of mammals are not completely isolated (Wright *et al.*, 1994). Many species have been observed swimming in the lake, including sloths (*B. variegatus* and *C. hoffmanni*), agoutis (*Dasyprocta punctata*), howler monkeys (*Alouatta palliata*), coatis (*Nasua narica*), jaguars (*Felis onca*), tapirs (*Tapirus bairdii*), peccaries (*Tayassu tajacu*), and deer (*Odocoileus virginianus* and *Mazama americana*; Wright *et al.*,

1994). Although tamanduas have not been seen in open water in the past, a researcher working at the site watched a tamandua enter one of the lake inlets between the island's peninsulas and swim across (K. Reiss, pers. comm.). Movement across the canal has not been explicitly measured for the vast majority of mammals, but individuals may take the plunge to gain access to food or mates, disperse or escape predators.

While driving a small boat in Gatun Lake (9°10'40"N, 79°50'01"W), at 13:30 h on 26 January 2010, H.E. and Y.L. witnessed an adult *T. mexicana* swimming across the Panama Canal. The animal was coming from the direction of Buena Vista, the nearest mainland peninsula at a distance of approximately 120 m, and was swimming directly towards Barro Colorado Island which was still another 280 m away (Fig. 1). The tamandua was swimming with most of its long snout above the water, while the rest of its body was completely submerged, but it did not appear to be having any difficulties. Its choice of crossing the canal at a very narrow point suggests that the anteater had knowledge of the topography, possibly from previous experience.

H.E. and Y.L. decided to put the animal into the boat and drive it across the channel because they feared that an oncoming tanker ship might drown the anteater in its massive wake. As soon as they extended one of the paddles in the water near the animal it grasped onto it and climbed into the boat. As the authors continued across the canal, the tamandua tried to jump out of the boat several times and was eventually successful, immediately orienting towards the island and swimming in a straight line the remaining 50 m to the shore (Fig. 1). The anteater was last seen clinging to some low overhanging branches and pulling itself out of the water.

While we cannot be certain that the anteater would have made it across the canal without assistance, it certainly behaved as though it was a strong swimmer and comfortable in the water. It is very likely that other crossing points exist and that there is regular exchange between populations of tamanduas living on the mainland and the island, which would reduce the genetic isolation of the island population. If a willingness to take to water is widespread in *Tamandua* anteaters, it helps to explain the broad distribution of these species and suggests an ability to locate isolated patches of habitat in areas that have been modified by canals, dams, or rivers.

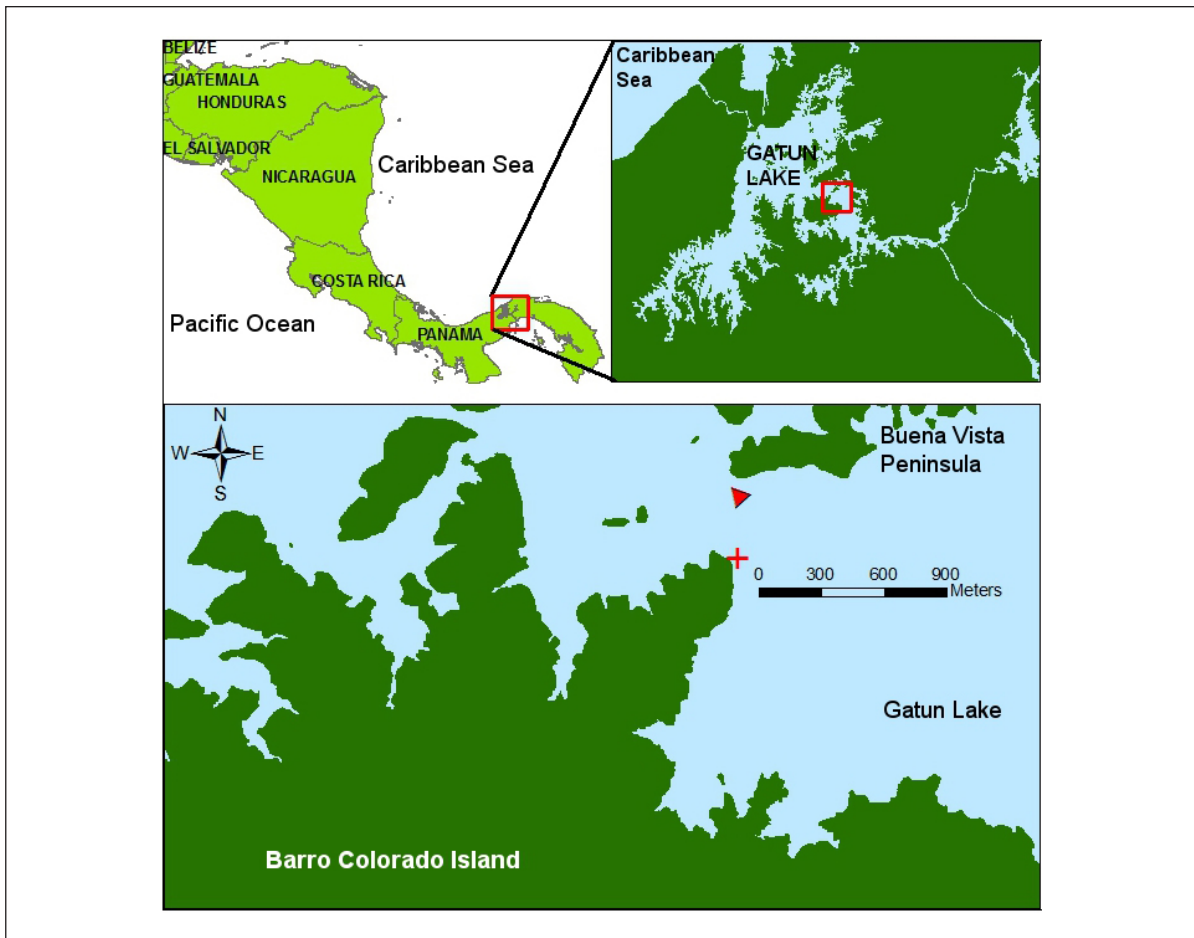


Figure 1. Barro Colorado Island and southern tip of Buena Vista peninsula (bottom center), with the location of the northern tamandua found swimming across the Panama Canal. The triangle marks the location where the animal was first seen. The X is where the anteater left the boat and swam for the nearest shore. [Map created by D.B. using ArcGIS 9.3.1, from basemaps created by Autoridad del Canal de Panamá – Unidad de Sensores Remotos, 2003]

Helen Esser, Wageningen University, Haarweg 69, 6709 PP Wageningen, the Netherlands, e-mail: <helen.esser@wur.nl>; **Danielle Brown**, Department of Neurobiology, Physiology and Behavior, University of California, 1 Shields Ave., Davis, CA 95616, U.S.A., e-mail: <ddebrown@ucdavis.edu>; and **Yorick Liefing**, Wageningen University, Haarweg 69, 6709 PP Wageningen, the Netherlands, e-mail: <yorick.liefing@wur.nl>

References

- Anderson, R. P. and Handley Jr., C. O. 2001. A new species of three-toed sloth (Mammalia: Xenarthra) from Panama, with a review of the genus *Bradypus*. *Proc. Biol. Soc. Wash.* 114(1): 1–33.
- Autoridad del Canal de Panamá – Unidad de Sensores Remotos. 2003. Cobertura Boscosa 2003 - Area de BCI. <<http://mapserver.stri.si.edu/>>. Accessed 18 June 2010.
- Beebe, W. 1926. The three-toed sloth (*Bradypus cuculliger cuculliger* Wagler). *Zoologica* 7: 1–67.
- da Silveira, E. K. P. 1968. Notas sobre a historia natural do tamanduá mirim (*Tamandua tetradactyla chiriquensis* J. A. Allen 1904, Myrmecophagidae), com referências á fauna do istmo do Panamá. *Velozia* 6: 9–31.
- Dietrich, W. E., Windsor, D. M. and Dunne, T. 1982. Geology, climate, and hydrology of Barro Colorado Island. In: *The Ecology of a Tropical Forest: Seasonal Rhythms and Long-Term Changes*, E. G. Leigh Jr., A. S. Rand and D. M. Windsor (eds.), pp. 21–46. Smithsonian Institution Press, Washington, DC.
- Eisenberg, J. F. 1989. *Mammals of the Neotropics, Volume 1. The Northern Neotropics: Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana*. The University of Chicago Press, Chicago.

-
- Moeller, W. 1975. Edentates. In: *Grzimek's Animal Life Encyclopedia*, B. Grzimek (ed.), pp. 149–181. Van Nostrand Reinhold Company, New York.
- Montgomery, G. G. 1985. Movements, foraging and food habits of the four extant species of Neotropical vermilinguas (Mammalia: Myrmecophagidae). In: *The Evolution and Ecology of Armadillos, Sloths, and Vermilinguas*, G. G. Montgomery (ed.), pp. 365–377. Smithsonian Institution Press, Washington, DC.
- Montgomery, G. G. and Lubin, Y. D. 1977. Prey influences on movements of neotropical anteaters. In: *Proceedings of the 1975 Predator Symposium*, R. L. Phillips and C. J. Jonkel (eds.), pp. 103–131. Montana Forest and Conservation Experiment Station, School of Forestry, University of Montana, Missoula, MT.
- Nowak, R. M. 1999. Anteaters. In: *Walker's Mammals of the World*, R. M. Nowak (ed.), pp. 154–156. The Johns Hopkins University Press, Baltimore.
- Rodrigues, F., Marinho-Filho, J., and dos Santos, H. G. 2001. Home ranges of translocated lesser anteaters *Tamandua tetradactyla* in the cerrado of Brazil. *Oryx* 35(2): 166–169.
- Wright, J. S., Gompper, M. E. and DeLeon, B. 1994. Are large predators keystone species in Neotropical forests? The evidence from Barro Colorado Island. *Oikos* 71: 279–294.