

FIRST CONFIRMED RECORD OF THE ROSY BOA (*LICHANURA TRIVIRGATA*) IN NATIVIDAD ISLAND, PACIFIC OF BAJA CALIFORNIA: A REAPPEARANCE AFTER 75 YEARS?

PRIMER REGISTRO CONFIRMADO DE LA BOA ROSADA DEL NOROESTE (*LICHANURA TRIVIRGATA*) EN ISLA NATIVIDAD, PACÍFICO DE BAJA CALIFORNIA: ¿REAPARICIÓN DESPUÉS DE 75 AÑOS?

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Received: 2023-09-13. Accepted: 2023-12-07. Published: 2023-12-27.

Editor: Carlos Alberto Hernández Jiménez, México.

The Peninsula of Baja California, and its adjacent islands, has a long history herpetofaunistic studies, despite the remoteness, isolation, and difficult access inherent to islands, the biodiversity of the Baja California's Pacific Islands is mostly considered well-known. And little has change about our knowledge of herpetofaunistic diversity in those islands since Grismer's book in 2002. According with González-Sánchez et al. (2023), the insular systems of the Pacific of Baja California host 40 species of herpetofauna, 36 of them are reptiles, including 16 snakes. Although Natividad (27.92° N, 115.15° W, within the

patterns, with dorsal ground color dark gray, brown, dull yellow, or tan; with one dorsal and two lateral, serrate, or well-defined stripes. Those stripes may be nearly black, dark brown, brick red, orange, or tan, and may or may not be distinct from dorsal ground color; iris silver, gray, or orangish (Grismer, 2002). It is listed in NOM-059-SEMARNAT-2010 (DOF, 2019) under the "Amenazada" (Threatened) category, included in the Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES; UNEP-WCMC, 2023), and catalogued as Least Concern (LC) by the International Union for Conservation of Nature (IUCN; Hammerson, 2019).

El Vizcaíno Biosphere Reserve, Fig. 1) is a large desert island (6 km long and 2.5 km wide at its maximum, with an area of 1,000 ha), not far from mainland (5 km north of Punta Eugenia, Mulegé municipality, Baja California Sur, Mexico) and one of few Mexican islands with permanent human settlements (~300 inhabitants), until today only two reptile species were confirmed in the island: *Uta stansburiana* commonly named Common Side-blotched Lizard and *Aspidoscelis tigris* known as Tiger Whiptail lizard.

Lichanura trivirgata commonly known the Rosy Boa is a small-medium sized snake (Snout-Vent Length, SVL= ~110mm), although mostly known for its characteristic rosaceous coloration, its populations are very variable in their color

The species distribution ranges from southwestern Arizona and southern California to most of the coast of Sonora and through the Baja California Peninsula to Los Cabos region with a notorious gap in the Vizcaino Peninsula (Grismer, 2002; Reynolds & Henderson, 2018; Wallach et al., 2014). Although unconfirmed reports in the mid-1990's from Rancho San Ramon in the Sierra Santa Clara indicate that *L. trivirgata* may be present in the Vizcaíno Peninsula (Grismer et al., 1994). Regarding its distribution in the insular systems of Baja California, *L. trivirgata* has confirmed records in Cedros and Santa Margarita islands in the Pacific, while in the Gulf of California is reported in Ángel de la Guarda, Carmen, Cerralvo, Coronados, Espíritu Santo, Mejía, San Marcos and Tiburón (González-Sánchez et al., 2023).

On June 20th, 2023, Cecilia Soldatini, Joel Aaron Lopez Hernandez, Gemma Abaunza, and Jorge Andrés Morales, found a specimen of *L. trivirgata* in Isla Natividad's southern region (27.860612° N, 115.171325° W; WGS84; ~47 m a.s.l.; figure 1) within a Shearwater (*Puffinus opisthomelas*) and Western Gull (*Larus occidentalis*) colony area in a desert scrub landscape, in a site very scarcely and sparsely vegetated with nonnative and native plants, sage and short barrel cacti.

The specimen of *L. trivirgata* was observed during a night survey at 23:00 h (06:00 UTC). It was moving very slowly due to low temperatures. The photographic evidence (Figs. 2 and 3) was vouchered in San Diego Natural History Museum

(SDSNH_HerpPC_o5488 and SDSNH_HerpPC_o5489) verified by Bradford Hollingsworth.

This record constitutes only the third insular confirmed population in the Pacific of Baja California, and it is also just the third reptile species reported for Natividad. The presence of *L. trivirgata* in Natividad was hinted by Bostic (1975), who listed a catalogued specimen in the San Diego Natural History Museum (SDSNH 39002) collected in 1948. However, the whereabouts of that specimen is unknown, and has been recorded in their database as “missing” for many years. Furthermore, there is not acknowledgment that a museum specimen once existed (Bradford Hollingsworth, *pers. comm.*). Thus, subsequent authors



Figura 1. Localización del sitio de avistamiento (marcador rojo) de la boa rosada del noroeste (*Lichanura trivirgata*), en Isla Natividad, al interior de la Reserva de la Biosfera El Vizcaino, Baja California Sur, México

Figure 1. Location of the observation site (red mark) of the Rosy Boa (*Lichanura trivirgata*), on Natividad Island, within Reserva de la Biosfera El Vizcaino, Baja California Sur, Mexico.



Figura 2. *Lichanura trivirgata* (Boa Rosada del Noroeste) observada en Isla Natividad, dentro del área de colonias de pardela mexicana (*Puffinus opisthomelas*) y gaviota occidental (*Larus occidentalis*). Voucher de la foto: SDSNH_HerpPC_05488. Foto: Jorge Andrés Morales-Rico.

Figure 2. The Rosy Boa (*Lichanura trivirgata*) observed on Natividad Island in the Black-vented shearwater (*Puffinus opisthomelas*) and Western Gull (*Larus occidentalis*) colonies area. Photo voucher: SDSNH_HerpPC_05488. Photo: Jorge Andrés Morales-Rico.

as Ottley (1978), Yingling (1982), and Grismer (2002), made only tentative statements, or even omitted any mention of it (e.g., Reynolds & Henderson, 2018; Wallach et al., 2014; González-Sánchez et al., 2023).

It is notorious that its occurrence is confirmed 75 years after the possible collection of SDSNH 39002 (if it ever existed) and almost 50 years since Bostic (1975) hinted its existence in Natividad Island. Since this island has a permanent human settlement, and has been visited frequently by biologists, the fact it took so much time to find a specimen suggest that: 1) It never has been common on the island, and this could be due natural population demographics, and/or 2) the snake is rare due the deleterious effects invasive mammal species may have had on this snake, since cats were introduced in the early 1920's by fishermen to "control" local populations of *Peromyscus maniculatus*, with some other reintroduction events in the

following decades. The impacts that feral cats had on the sea birds from Natividad have been documented extensively, for example, Keitt et al. (2002) documented 25 cats killed 1,012 Black-vented Shearwaters (*Puffinus opisthomelas*) every month. Still, nothing is known about the effects feral cats had on the herpetofauna of Natividad in nearly a century, in which those mammals were abundant on the island until its eradication in 1998-2000 (Keitt et al., 2002). This is not an improbable scenario since it wouldn't be the first time that a long-time unseen reptile "reappears" some years after the eradication of an invasive mammal (González-Sánchez et al., 2023).

Also, since *L. trivirgata* is now confirmed in Cedros and Natividad islands, it is also likely that it can or could inhabit in other nearby islands from the Vizcaíno Peninsula, such as the San Benito Archipelago. Even more, the Natividad Island population of *L. trivirgata* could have important value for conservation and



Figura 3. Acercamiento del espécimen de boa rosada del noroeste (*Lichanura trivirgata*) observada en Isla Natividad. Voucher de la foto: SDSNH_HerpPC_05488. Foto: Jorge Andrés Morales-Rico.

Figure 3. Close up of the Rosy Boa (*Lichanura trivirgata*) specimen observed on Natividad Island Photo voucher: SDSNH_HerpPC_05488. Photo: Jorge Andrés Morales-Rico.

taxonomic studies, since the nearby Cedros island is the type locality of the endemic subspecies *L. trivirgata bostici* (Spitteri & College, 1994), and there is a chance that Natividad's *L. trivirgata* population may belong to this subspecific group.

Acknowledgements.— We thank Bradford Hollingsworth for his insightful comments about the whereabouts of the SDSNH 39002 specimen and also to two anonymous reviewers whose comments improved the quality of our manuscript.

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