

SALVADORA INTERMEDIA (SQUAMATA: COLUBRIDAE)

Medardo Arreortúa¹, César Camilo Julián-Caballero² & Angel I. Contreras-Calvario^{1,3*}

¹Instituto Politécnico Nacional. Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional, Unidad Oaxaca. Laboratorio de Ecología de Anfibios (ECA), Hornos 1003, Col. Noche Buena, 71230, Santa Cruz Xoxocotlán, Oaxaca, México.

²Instituto Politécnico Nacional, Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional, Unidad Oaxaca, Hornos 1003, Col. Noche Buena, 71230 Santa Cruz Xoxocotlán, Oaxaca, México

³Herpetario de Veracruz. PIMVS. Veracruz, México.

*Correspondence: acontrerascalvario@gmail.com

Received: 2023-09-02. Accepted: 2023-01-10. Published: 2024-02-07.

Editor: Irene Goyenechea Mayer Goyenechea, México.

The genus *Salvadora* currently includes nine described species. Their range extends from the southwestern United States through Mexico to the Grijalva Depression of Chiapas and extreme western Guatemala (Heimes, 2016; Hernández-Jiménez et al., 2019). Species of *Salvadora* are medium-sized, diurnal snakes, inhabiting a variety of environments from sea level to

over 2,500 m of altitude (Hernández-Jiménez et al., 2019). Within Oaxaca, there are five species of genus *Salvadora* (Mata-Silva et al., 2021): *S. bairdi*, *S. gymnorhachis*, *S. intermedia*, *S. lemniscata*, and *S. mexicana*. The Oaxacan patch-nosed snake, *Salvadora intermedia*, has only been recorded in three states of Mexico: Guerrero, Puebla, and Oaxaca. In Oaxaca, it is distributed in



Figura 1. Especimen de *Salvadora intermedia*, localidad Rancho San Francisco, municipio de Asunción Nochixtlán, Oaxaca (CNAR-RF 959).

Figure 1. Specimen of *Salvadora intermedia*, Locality of Rancho San Francisco, Municipality of Asunción Nochixtlán, Oaxaca (CNAR-RF 959).

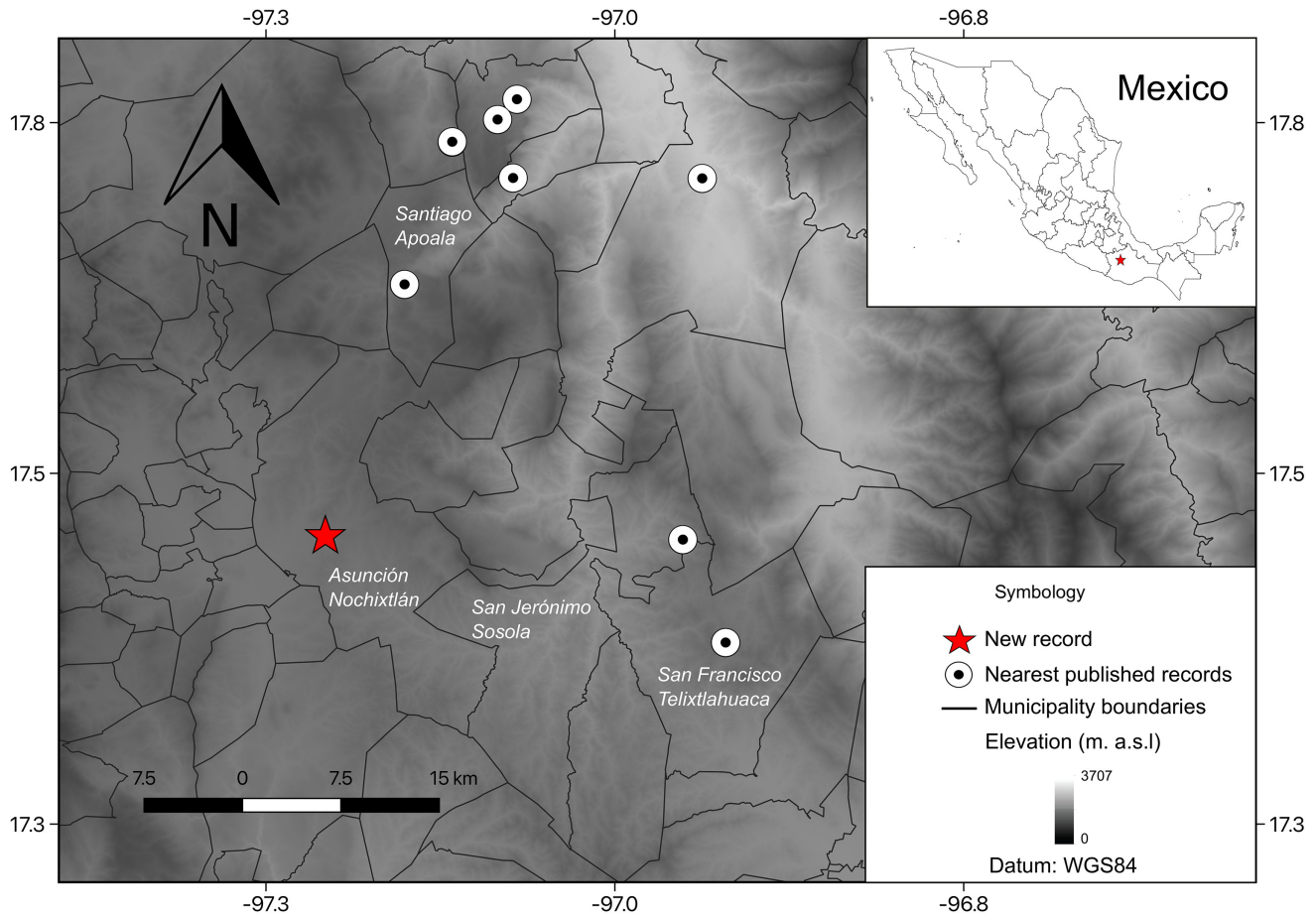


Figura 2. Nuevo registro de *Salvadora intermedia* y los registros publicados (GBIF, 2023) más cercanos del estado de Oaxaca, México.

Figure 2. New record of *Salvadora intermedia* and nearest published records (GBIF, 2023) from the state of Oaxaca, Mexico.

eight of the 12 physiographic regions, with no records in the Depresión del Balsas, Planicie Costera del Golfo, Montañas y Valles del Centro, and Depresión Istmica de Tehuantepec (Mata-Silva et al., 2021). It is considered as Least Concern by the IUCN (Canseco-Marquez et al., 2007) and under special protection (Pr) by Mexican laws NOM-059 (SEMARNAT, 2010). It mainly eats rodents, lizards, small snakes, and reptile eggs (Heimes, 2016). Here, we report the first record of *S. intermedia* in the Municipality of Asunción Nochixtlán in the state of Oaxaca, based on photographic evidence.

México: Oaxaca: Municipality of Asunción Nochixtlán: Locality of Rancho San Francisco (17.456349° N, 97.207185° W; WGS 84; 2,134 m a.s.l.). The individual reported here was found dead (CNAR-RF 959) on November 19, 2023 in a rural area of the community

with xerophytic vegetation interspersed with rainfed agriculture (INEGI, 2018) (Fig. 1). First municipality record in Asunción Nochixtlán (Fig. 2). The nearest vouchered records are 20 km to the northeast of Municipality of Santiago Apoala (Herpetological Collection, Benemérita Universidad Autónoma de Puebla [EBUAP] 1851) and 27 km east of Municipality of San Jerónimo Sosola (Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México (MZFC 8577-1) (GBIF, 2023). The Oaxacan patch-nosed snake occurs from the Sierra Madre del Sur of Guerrero through the highlands of Oaxaca and adjacent southern Puebla (Heimes, 2016). This snake inhabits pine-oak forest, mesquite-grassland, and desert scrub, ranging at 500 to 2700 m elevation (Heimes, 2016; GBIF, 2023). In the state of Oaxaca, *S. intermedia* has been recorded in four physiographic provinces (Mata-Silva et al., 2021): Fosa de Tehuacán, Montañas

y Valles del Occidente, Sierra Madre de Oaxaca, and Valles Centrales de Oaxaca. The specimen was not collected, but a photographic voucher of the specimen was deposited in the Colección Nacional de Anfibios y Reptiles (CNAR), Instituto de Biología, UNAM. The specimen identification was verified by Víctor H. Jiménez-Arcos. Reporting new records of a particular species increases the knowledge about them, the range of distribution is understood, and helps to understand the processes of colonization of the remaining habitats (Zunino & Zulini 2003). The records for *Salvadora intermedia* increase to 22 for Oaxaca, Mexico (GBIF, 2023). This information is a fundamental part of addressing the ecology of a poorly studied endemic species, which can be used to develop new conservation measures and to fill a gap in its distribution.

Acknowledgements.— To the municipal authorities and Victor H. Jimenez-Arcos for corroborating identification of the species.

CITED LITERATURE

- Canseco-Márquez, L., Campbell, J. A., Ponce-Campos, P., Muñoz-Alonso, A. & García-Aguayo, A. 2007. *Salvadora intermedia*. The IUCN Red List of Threatened Species 2007: e.T63913A12726405. <https://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T63913A12726405.en>. [Accessed on November 2023].
- GBIF. 2023. Global Biodiversity Information Facility occurrence download <https://doi.org/10.15468/dl.4u8df8> [Accessed on November 2023].
- Hernández-Jiménez, C. A., Flores-Villela, O., & Campbell, J. A. 2019. A new species of patch-nosed snake (Colubridae: *Salvadora* Baird and Girard, 1853) from Oaxaca, Mexico. *Zootaxa* 4564: 588-600.
- Heimes, P. 2016. *Herpetofauna Mexicana Vol. 1. Snakes of Mexico*. Edition Chimaira. Frankfurt am Main, Germany.
- Mata-Silva, V., E. García-Padilla, A. Rocha, D.L. DeSantis, J.D. Johnson, A. Ramírez-Bautista & L.D. Wilson. 2021. A reexamination of the herpetofauna of Oaxaca, Mexico: composition update, physiographic distribution, and conservation commentary. *Zootaxa* 4996: 201-252.
- INEGI. 2018. Conjunto de datos vectoriales de uso del suelo y vegetación. Escala 1:250 000. Serie VII. Conjunto Nacional. <https://www.inegi.org.mx/app/biblioteca/ficha.html?upc=889463842781> [Accessed on November 2023].
- SEMARNAT [Secretaría del Medio Ambiente y Recursos Naturales] (2010) Norma Oficial Mexicana NOM-059-SEMARNAT-2010. Protección ambiental-especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo. Lista de Especies en Riesgo. Diario Oficial de la Federación 2010, México, 77 pp.
- Zunino, M. & A. Zullini. 2003. *Biogeografía: la Dimensión Espacial de la Evolución*. Fondo de Cultura Económica. México City, México.

