

## Distributional Records of Herpetofauna from the Lower Peninsula of Michigan, USA

Here, we document seven new records of amphibians and reptiles across five counties in the Lower Peninsula of Michigan, USA. These records expand the knowledge of Michigan species' distributions, primarily through helping to fill gaps in their recognized occurrence. The specimens in this note represent opportunistic collections made from 2020–2021 and highlight the importance of continued efforts to observe and document species across their range (Nachman et al. 2023), even in states with a relatively robust understanding of their native species.

New county records were determined by examining Ruthven et al. (1928), Ross (2001), Holman (2012), Phillips (2016), Rutherford (2023), and individual issues of *Herpetological Review* published since 2013. To identify the closest recorded specimen data for each species, we queried collections using Arctos (<https://arctos.database.museum/>), Consortium of Vertebrate Collections (<https://cvcoll.org/>), and VertNet (<https://vertnet.org>). All specimens were deposited at the Biodiversity Collections, The University of Texas at Austin (TNHC) and species identifications were verified by Travis J. LaDuc. GPS data was collected with a handheld GPS (WGS 84 datum) and nomenclature follows that of Crother (2017). All specimens were collected under an approved Michigan Department of Natural Resources Scientific Collector's Permit (#FSCP02022021143321) and collection methods followed an approved IACUC protocol (UTRGV AUP #18-28). The closest known specimen records were from specimens housed at the Michigan State University Museum (MSUM) and the University of Michigan Museum of Zoology (UMMZ).

### CAUDATA — SALAMANDERS

**AMBYSTOMA LATERALE (Blue-spotted Salamander).** GLADWIN Co.: Gladwin County Recreation Area, 1365 Shaw Rd, Gladwin, MI 48624 (44.01196°N, 84.56227°W). 29 May 2021. Drew R. Davis and Jillian K. Farkas. TNHC 115950 (DRD 7603). Juvenile individual (1.9 g, 31 mm SVL, 35 mm tail length) collected alive under a log at 1638 h. An additional juvenile (TNHC 115951 [DRD 7604]: 2.1 g, 36 mm SVL, 28 mm tail length) was collected nearby at 1646 h. Gladwin County is included in several generalized occurrence maps of *A. laterale* in Michigan (Harding 1997; Harding and Holman 1992, 2015; Tekiela 2004, 2014; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered records were previously known. Records of *A. laterale* are present in adjacent Arenac, Clare, Isabella, Ogemaw, and Roscommon counties (Phillips 2016). These specimens extend the known range of *A. laterale* in Michigan by ca. 14.2 km

to the east-southeast from the nearest specimen in Clare County (UMMZ 159187).

**HEMIDACTYLUM SCUTATUM (Four-toed Salamander).** GLADWIN Co.: Gladwin County Recreation Area, 1365 Shaw Rd, Gladwin, MI 48624 (44.01119°N, 84.55431°W). 29 May 2021. Drew R. Davis and Jillian K. Farkas. TNHC 115948 (DRD 7601). Juvenile individual (0.5 g, 26 mm SVL, 26 mm tail length) collected alive under a log at 1332 h. An additional juvenile (TNHC 115949 [DRD 7602]: 0.6 g, 31 mm SVL, 35 mm tail length) was collected nearby at 1439 h. Gladwin County is included in several generalized occurrence maps of *H. scutatum* in Michigan (Harding and Holman 1992, 2015; Harding 1997; Tekiela 2004, 2014; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered records were previously known. Records of *H. scutatum* are present in adjacent Clare, Isabella, Roscommon, and Ogemaw counties (Phillips 2016). These specimens extend the known range of *H. scutatum* in Michigan by ca. 28.9 km to the south from the nearest specimen reported in Roscommon County (MSUM HE.13909).

MANISTEE Co.: Huron-Manistee National Forest, along Manistee River Red Bridge Spur, North Country Trail (44.28952°N, 85.86597°W). 26 July 2020. Drew R. Davis and Jillian K. Farkas. TNHC 114661 (DRD 6865). Juvenile (0.6 g, 33 mm SVL, 35 mm tail length) collected alive under a log at 1540 h. An additional specimen (TNHC 114662 [DRD 6866]: female, 1.5 g, 39 mm SVL, 46 mm tail length) was collected nearby at 1550 h. Manistee County is included in several generalized occurrence maps of *H. scutatum* in Michigan (Harding and Holman 1992, 2015; Harding 1997; Tekiela 2004, 2014; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered records were previously known. Records of *H. scutatum* are present in adjacent Benzie, Grand Traverse, Lake, and Wexford counties (Phillips 2016). These specimens extend the known range of *H. scutatum* in Michigan by ca. 35.2 km to the northwest from the nearest specimen reported in Lake County (UMMZ 60892).

**NOTOPHTHALMUS VIRIDESCENS (Eastern Newt).** LAKE Co.: E Chickadee Ln, ca. 0.3 rd km W jct N Wide Water Rd (44.04329°N, 85.77577°W). 22 May 2021. Drew R. Davis and Jillian K. Farkas. TNHC 115947 (DRD 7591). Juvenile specimen (0.4 g, 23 mm SVL, 23 mm tail length) collected alive under a log at 1910 h. Lake County is included in several generalized occurrence maps of *N. viridescens* in Michigan (Harding 1997; Harding and Holman 1992, 2015; Tekiela 2004, 2014; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered records were previously known. Records of *N. viridescens* are present in adjacent Mason, Manistee, Mecosta, and Oceana counties (Phillips 2016). This specimen extends the known range of *N. viridescens* in Michigan by ca. 37.2 km to the northwest from the nearest specimen reported in Mecosta County (UMMZ 61689).

### ANURA — FROGS

**HYLA VERSICOLOR (Gray Treefrog).** OCEANA Co.: E Madison Rd, just W jct N 176<sup>th</sup> Ave (43.77206°N, 86.1186°W). 27 July 2020.

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Drew R. Davis and Jillian K. Farkas. TNHC 114663–114665 (DRD 6874–6876). Three juvenile specimens (TNHC 114663: 1.0 g, 22 mm SVL; TNHC 114664: 1.0 g, 23 mm SVL; TNHC 114665: 1.3 g, 24 mm SVL) collected AOR at 0030 h. A query of museum records revealed possible additional specimens collected in Oceana County in 1903 and 1979 (UMMZ 30619, 156553, 156554); however, all individuals are cataloged as *H. versicolor/chrysoscelis*. The phenotypic similarities between *H. versicolor* and *H. chrysoscelis* have resulted in confusion surrounding the distribution of both species across their range, and the use of karyotyping and call analyses can be used to diagnose these species. Phillips (2016) suggests *H. versicolor* has an almost statewide distribution in Michigan while *H. chrysoscelis* is found in the Upper Peninsula and at scattered localities across the southern Lower Peninsula, including Oceana County. During previous visits to this locality, only *H. versicolor* has been heard calling in a pond on private property on the north side of E Madison Rd. During a visit to this site on 27 July 2020, only *H. versicolor* was heard calling, as had been the case previously. Oceana County is included in several generalized occurrence maps of *H. versicolor* in Michigan (Harding and Holman 1992, 2015; Harding 1997; Tekiela 2004, 2014; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered records were previously known. Records of *H. versicolor* are present in adjacent Mason, Muskegon, and Newaygo counties (Phillips 2016). These specimens extend the previously documented range for *H. versicolor* in Michigan by ca. 14.2 km southeast of the nearest specimen reported in Mason County (UMMZ 156551, 156552).

#### TESTUDINES — TURTLES

**STERNOTHERUS ODORATUS (Eastern Musk Turtle).** MECOSTA Co.: Chippewa Lake, vegetated cove along E shore of East Bay (43.75747°N, 85.2811°W). 7 June 2020. Drew R. Davis and Jillian K. Farkas. TNHC 114637 (DRD 6786). Adult female (163.7 g, 97 mm carapace length, 80 mm plastron length; leeches present) collected alive in a baited collapsible mesh trap at 0930 h. *Sternotherus odoratus* is believed to occur in Mecosta County (Ross 2001), and the county is included in several generalized occurrence maps of *S. odoratus* in Michigan (Harding and Holman 1997, 2014; Tekiela 2004, 2014; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered specimens were previously known. This voucher also verifies a questionable occurrence of this species in Mecosta County previously reported by Phillips (2016). Records of *S. odoratus* are present in adjacent Isabella, Lake, Montcalm, and Newaygo counties (Phillips 2016). This specimen extends the known range of *S. odoratus* in Michigan by ca. 38.4 km to the north-northwest from the nearest specimen reported in Montcalm County (UMMZ 122719).

#### SQUAMATA — SNAKES

**STORERIA DEKAYI (Dekay's Brownsnake).** LAKE Co.: W 56<sup>th</sup> Ave, ca. 0.2 rd km SW jct W 52<sup>nd</sup> St (43.89209°N, 85.91275°W). 25 July 2020. Drew R. Davis. TNHC 114659 (DRD 6855). Adult female (4.7 g, 198 mm SVL, 54 mm tail length) collected DOR at 0124 h. N State Rd, ca. 1.0 rd km N jct E 8 Mile Rd (near bridge over Pine River) (44.11283°N, 85.68312°W). 1 August 2020. Drew R. Davis. TNHC 114660 (DRD 6884). Adult male (7.9 g, 233 mm SVL, 78 mm tail length) collected DOR at 2313 h. Lake County is included in several generalized occurrence maps of *S. dekayi* in Michigan (Holman et al. 1999; Tekiela 2004, 2014; Holman and

Harding 2006; Sheldon 2006, 2022; Harding and Mifsud 2017), but no vouchered specimens were previously known. Records of *S. dekayi* are present in adjacent Manistee, Mason, Mecosta, Oceana, Osceola, and Wexford counties (Phillips 2016). These specimens extend the known range for *S. dekayi* in Michigan by ca. 35.0–38.6 km to the northwest from the nearest specimen reported in Mecosta County (UMMZ 61713).

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