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New Distribution Records for *Terrapene carolina* (Eastern Box Turtle) Collected Through a Community Scientist Program in West Virginia, USA

Accurate spatial distributions are essential for developing effective, science-based conservation strategies, but occurrence data is often limited for rare and elusive species. Community science initiatives offer a powerful mechanism for obtaining large numbers of occurrence records over broad geographic areas for target species (Bonney et al. 2009; Dickinson et al. 2010), and thus can be a valuable data collection tool for scientists and managers with limited funding. Data from community science-based projects have allowed researchers to track population trends and improve species distribution maps and models (e.g., Pearce and Boyce 2006; Tiago et al. 2017; Heres et al. 2021). However, data collected during community science projects are often spatially biased (Phillips et al. 2009), and data integrity can be a concern if participants lack the skills needed to identify the target species (Silvertown 2009). Selecting target species that are easily identifiable and incorporating photograph verification into the project workflow can maximize integrity of the observation data.

In January 2020, the West Virginia Division of Natural Resources (WVDNR) initiated a two-year statewide community science initiative to improve our knowledge of the distribution of *Terrapene carolina* (Eastern Box Turtle). The program operated using ArcGIS Survey123 (<https://survey123.arcgis.com>; 6 Dec

2022), where community scientists uploaded photographs, entered observation information (location, date of observation, comments on the observation), and provided their contact information. Submissions were then reviewed by WVDNR staff, and verified records were added to the state herpetofaunal records database.

The community science monitoring program received 6,045 verified and 2,681 unverified *T. carolina* observations between 1 January 2020 and 31 December 2021 (Fig. 1). Of these observations, 25.1% and 2.3% of individuals were observed alive and dead on a road, respectively. Five of the submissions were county records, which we report here. All photograph vouchers were deposited in the Illinois Natural History Survey (INHS) digital image collection. Every county in West Virginia is now vouchered for *T. carolina*. Fayette County was vouchered between Green and Pauley (1987) and this publication (Florida Museum of Natural History [UF] 155798).

TESTUDINES — TURTLES

TERRAPENE CAROLINA (Eastern Box Turtle). BARBOUR Co.: 1.1 km E Hanging Rock Road and 0.1 km N Little Laurel Run (39.1069°N, 80.0270°W; WGS 84). 17 June 2020. Malachia Evans. Verified by Chris A. Phillips. INHS 2021nn (photo voucher). New county record (Green and Pauley 1987). A total of 28 verified *T. carolina* community science observations were received for Barbour County.

BROOKE Co.: 0.1 km S Route 27, off Bowers Lane (40.2669°N, 80.5902°W; WGS 84). 28 May 2021. Nancy Ford. Verified by Chris A. Phillips. INHS 2021oo (photo voucher). New county record (Green and Pauley 1987). A total of 8 verified *T. carolina* community science observations were received for Brooke County.

MARION Co.: 0.3 km E Davey Run Road (39.5425°N, 80.1980°W; WGS 84). 13 September 2020. Ryan Ward. Verified by Chris A.

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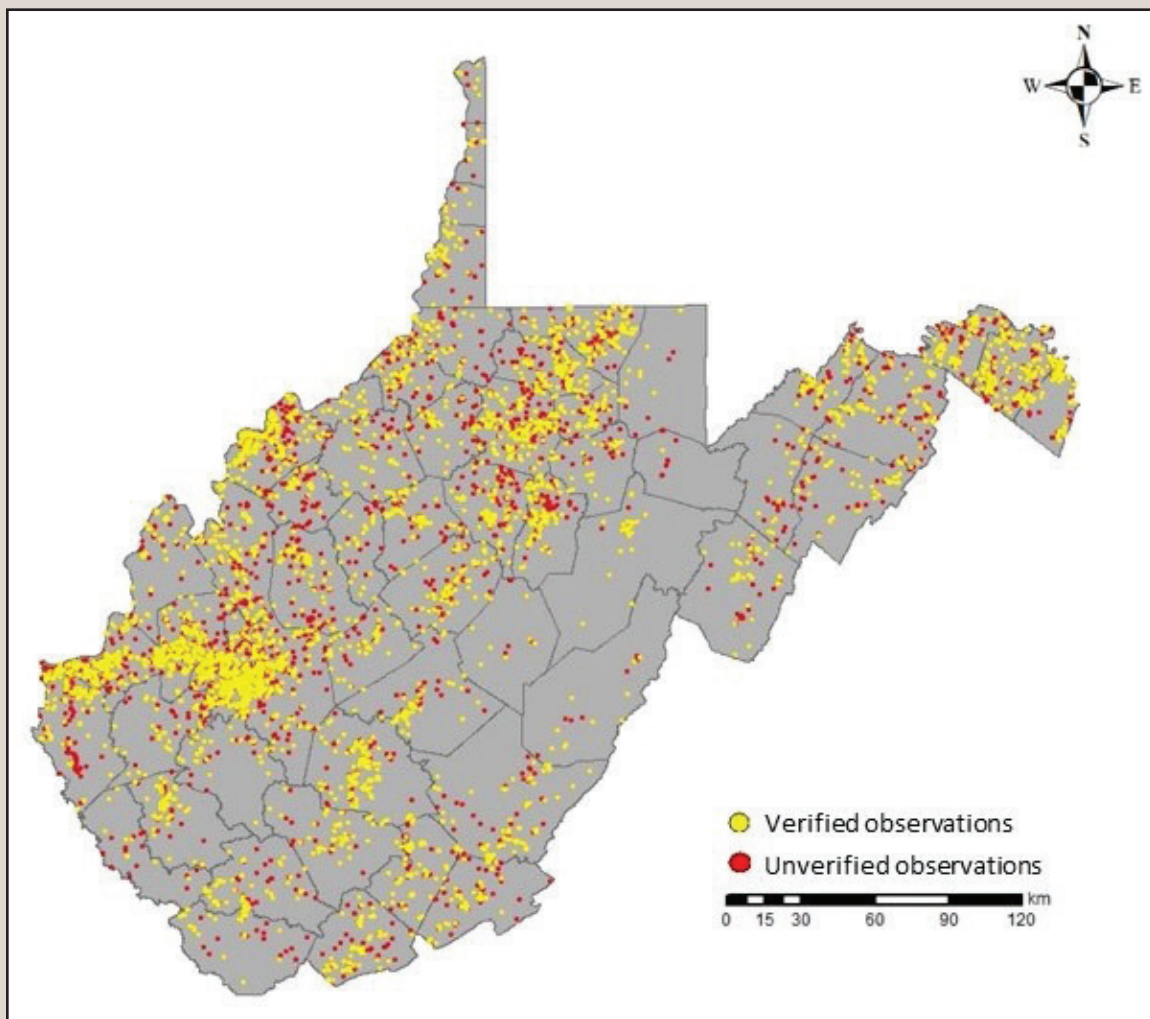


FIG. 1. Verified (N = 6045) and unverified (N = 2681) community scientist observations of *Terrapene carolina* (Eastern Box Turtle) in West Virginia, USA, that were submitted to the West Virginia Division of Natural Resources between 1 January 2020 and 31 December 2021.

Phillips. INHS 2021pp (photo voucher). New county record (Green and Pauley 1987). A total of 102 verified *T. carolina* community science observations were received for Marion County.

TAYLOR CO.: 0.2 km E Long Run Road (39.2865°N, 80.0836°W; WGS 84). 7 May 2020. Michael Colebank. Verified by Chris A. Phillips. INHS 2021qq (photo voucher). New county record (Green and Pauley 1987). A total of 60 verified *T. carolina* community science observations were received for Taylor County.

WOOD CO.: Mineral Wells, 0.13 km NE Price Road (39.1789°N, 81.4802°W; WGS 84). 10 June 2020. Rowena Sizemore. Verified by Chris A. Phillips. INHS 2021rr (photo voucher). New county record (Green and Pauley 1987). A total of 241 verified *T. carolina* community science observations were received for Wood County.

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