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First Record of the Ornate Box Turtle (*Terrapene ornata ornata*) from the Grand Prairie Ecoregion of Arkansas since 1981

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Running title: *Terrapene ornata ornata* in the Grand Prairie Ecoregion

On 11 July 2008, one small adult male Ornate Box Turtle (*Terrapene ornata ornata*), estimated to be approximately 7 or 8 years old, was found by C.T. Witsell while conducting plant surveys at Roth Prairie Natural Area in Arkansas County. This was the first documentation of this species from the Grand Prairie (Level IV) Ecoregion since 1981 and the first report from Arkansas County (ANHC 2013, Trauth et al. 2004). The location of capture, near the center of the natural area, was marked with flagging and the animal removed to Little Rock for verification. Once the identity was verified by M.D. Warriner, the animal was marked by filing single V-shaped notches into marginal scutes A, B, and C (Fig. 2, B), returned to Roth Prairie on 14 July 2008, photographed (Fig. 2), and released at the point of capture.

T. ornata ornata is a species of conservation concern in Arkansas that historically occurred in native grasslands in several regions of the state (England 1979, Trauth et al. 2004). It apparently experienced steep declines in Arkansas following widespread destruction of native grasslands and has been given a state conservation status rank of S2 (very rare) by the Arkansas Natural Heritage Commission (ANHC) (ANHC 2013, England 1979, Trauth et al. 2004). Potential threats to this species in Arkansas include destruction of remaining native grassland habitat through plowing and/or succession to woody vegetation, over-collection (especially for the pet trade), smashing by vehicles and bush-hogging equipment, inbreeding depression on isolated sites, and possible hybridization with the common Three-toed Box Turtle (*Terrapene carolina triunguis*) (ANHC 2013). Most recent records known to the ANHC are from unplowed prairie remnants, some small and isolated, in the Springfield Plateau Ecoregion of the Ozark Highlands (Benton and Boone counties) and the Arkansas Valley Plains Ecoregion of the Arkansas Valley (Franklin and Sebastian counties). Field staff of the ANHC and The Nature Conservancy occasionally

report encountering individuals of *T. ornata ornata* in prairie remnants in these areas. However, despite a number of surveys on remnant prairies in the Grand Prairie Ecoregion of the Mississippi Alluvial Plain, no live animals had been observed in that Ecoregion since 1981.

Distribution records of *T. ornata ornata* in Arkansas (Figs. 3 and 4) largely correlate with the historical locations of native grasslands but vary according to the reference consulted. Trauth et al. (2004) show records from Benton, Boone, Craighead, Franklin, Garland, Prairie, Pulaski, Sebastian, and Washington counties. In addition, the Arkansas Natural Heritage Commission also has record of occurrences in Columbia, Mississippi, and Phillips counties. Schwarzt (1938) also lists Lafayette and Perry counties, and

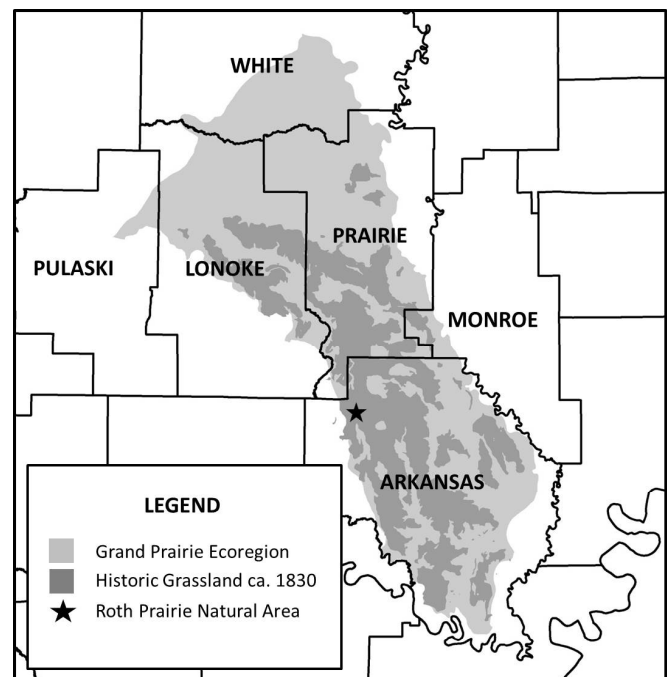


Figure 1: Map showing the Grand Prairie (Level IV) Ecoregion, the extent of major grasslands ca. 1830, and the location of Roth Prairie Natural Area.



Figure 2: Photographs of *T. ornata ornata* at Roth Prairie Natural Area showing A) plastron, B) right side of carapace with notches filed into marginal scutes, and C) left side of carapace. All photos taken 14 July 2008 by M.D. Warriner.

Dellinger and Black (1938) list Fulton County. Roberts and Irwin (2012) map records for Nevada and Polk counties. These county level records and their sources are summarized in figure 3. Most of these records are considered by the ANHC to be historical (more than 20 years old). Only Arkansas, Benton, Boone, Franklin, Polk, and Sebastian counties have records from the last 20 years (Fig. 4).

Roth Prairie Natural Area is a 16.6 hectare (41 acre) tallgrass prairie remnant owned by Arkansas State University and protected by a conservation easement held by the Arkansas Natural Heritage Commission. It is one of very few unplowed prairie remnants left in the Grand Prairie, is surrounded by agricultural cropland, and is far removed from other tracts of remnant prairie. From 1911 to 1975, Roth Prairie was managed with annual haying and/or burning. It was added to the State's System of Natural Areas in 1976 and has since been managed as native

prairie, primarily with prescribed fire. Records maintained by the ANHC give the following burn history: Feb 1977 (entire prairie), Feb 1980 (entire), Nov 1982 (entire), Feb 1985 (partial), Feb 1986 (unknown if entire or partial), Mar 1987 (partial), Feb 1988 (partial), Mar 1990 (partial), Oct 1995 (entire), Oct 1997 (entire), Oct 2000 (entire), Jan 2003 (entire), Oct 2005 (entire), Nov 2007 (entire), Nov 2009 (partial), 2011 (entire), and Mar 2013 (half).

The Grand Prairie Ecoregion contained approximately 161,875 hectares (400,000 acres) of tallgrass prairie at the time of European settlement (T. Foti, *pers. comm.*), of which no more than 209 hectares (517 acres) remain, a loss of nearly 99.9 percent (ANHC 2013). Given this loss of habitat, and the isolated location of Roth Prairie, it is remarkable that *T. ornata ornata* still exists there.

On March 15, 2013 half of Roth Prairie was burned by ANHC staff. Following the burn a single

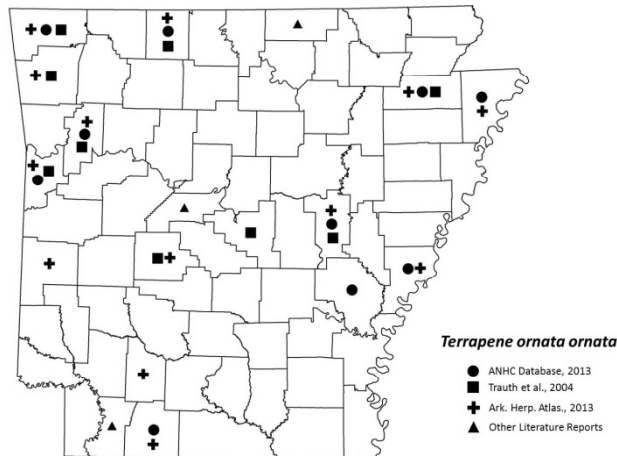
Terrapene ornata ornata in the Grand Prairie Ecoregion

Figure 3: Map showing county level distribution of *T. ornata ornata* in Arkansas as reported by various references.

dead male box turtle was found, obviously killed during the fire. Photographs of this individual were sent to experts for identification but determinations varied, with two determining it to be *T. ornata* and a third believing it to be a hybrid between *T. ornata* and *T. carolina*. Patterns on the plastron, the presence of four toes on the hind legs, a relatively flat-topped carapace, as well as overall size, were consistent with *T. ornata*. However, patterns on the carapace appeared more similar to *T. carolina*). This dead individual was smaller than the specimen in Figure 2 and did not bear the notches in the marginal scutes. More research is warranted to determine the population size and condition of *T. ornata* at Roth Prairie.

Acknowledgements

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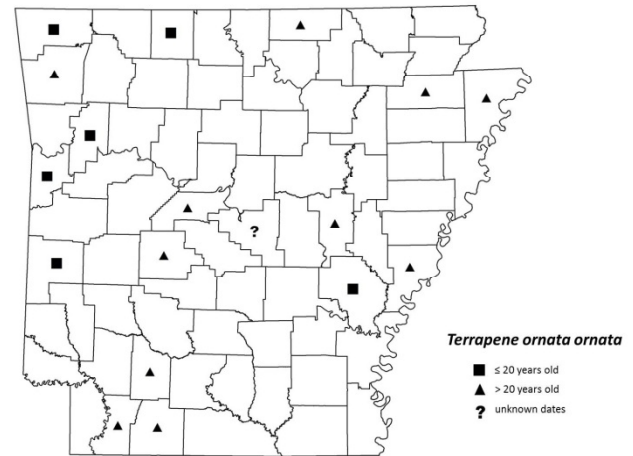


Figure 4: Map showing relative age of records of *T. ornata ornata* in Arkansas.

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