

## **Eastern Box Turtle (*Terrapene carolina carolina*)**

*Terrapene carolina carolina* is found in Eastern North America in open woodlands, pastures and marshy meadows (Ernst et al. 1994) and has been one of the most common terrestrial reptiles in the eastern United States (Claussen et al. 1991). The natural plant communities in Northern Hamilton County are mostly Dry-Mesic Oak Forest of Middle and East Tennessee and Xeric-Dry Oak Forest of Middle and East Tennessee (Tennessee GAP Analysis Land Cover Manual 2006). According to species habitat association information obtained from the Tennessee Wildlife Resource Agency (TWRA), *Terrapene carolina carolina* inhabits all of the plant communities in Tennessee (GAP database file obtained from TWRA 2007). Eastern Box Turtles like to over winter on moist, south, southwest slopes (Dodd 2001) in at least a .8 cm deep hibernaculum within the soil and a thick mat of leaf litter cover at least 10 cm deep (Dolbeer 1971), or they may spend the winter in the muddy bottom of a puddle (Ernst et al. 1994). Donaldson and Echternacht (2005) observed box turtles in Tennessee thermoregulating by spending weeks at a time during the summer submerged in pond mud. *Terrapene carolina* living in isolated and fragmented habitat patches in Delaware have been observed to move around less frequently than turtles in more favorable habitat (Iglay 2007) but home range areas may be larger in unfavorable habitat (Stickel 1948, 1950). Experiments with captured box turtles from Ohio in the laboratory report that box turtles are good at going up grades up to 40° but have limited ability to descend slopes (-10° to -40°) (Muegel and Claussen 1994). It is known that female turtles can travel long distances to find suitable nesting sites and male turtles can make frequent and long movements in search of mating opportunities (Gibbons 1986). Nesting generally occurs in June, the female prefers just before, during or after rainfall in the afternoon (Dodd 2001). Flitz and Mullins (2006) studied 24 female box turtles in Illinois all of which nested in open, disturbed clearings. The subjects of the study had some daily straight line movements greater than 500 meters prior to nesting. It is generally agreed that box turtles prefer an open, elevated patch of sandy, loamy soil for nesting (Ernst et al. 1994). Home range of a box turtle is the area normally traveled in its activities and territory is a defended area that may include home range or part of a home range (Stickel 1950). Juvenile and adult box turtles may exhibit differential habitat use. On Egmont Key in Florida Jennings (2007) found that juveniles rarely used open areas but used areas with leaf litter, and soil more frequently, substrates with high moisture content (>75%) dense cover at low, mid-story, and canopy heights. Precipitation stimulates increased movement and facilitates foraging in terrestrial species like *Terrapene carolina* (Shepard et al. 2008a).

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