Hitching a ride: First record of a Least Chipmunk (Tamias minimus) in eastern Nebraska

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Humans transfer organisms across the world deliberately or inadvertently, introducing species into areas where they do not occur naturally (Heinsohn 2003, Jeschke and Strayer 2005, Nathan et al. 2008, Krysko et al. 2016). Plants, especially their seeds, commonly are moved inadvertently (Hodkinson and Thompson 1997, Mack and Lonsdale 2001, Nathan et al. 2008), but vertebrates also are occasionally transported unintentionally by humans (Heinsohn 2003, Short and Petren 2011). Human-mediated dispersal generally enables species to move greater distances than by natural dispersal events (Short and Petren 2011). Some human introductions lead to new established populations, but others do not. Proportions of introduced animals that successfully become established vary by study and by organismal group, but generally establishment is > 10% (see Fig. 2 in Jeschke and Strayer 2005). For example, about 30% of nonindigenous amphibians and reptiles have become established in Florida after being introduced (Krysko et al. 2016), > 50% of vertebrates have become established when transported between North American and Europe (Jeschke and Strayer 2005), and about 25% of introduced vertebrates worldwide have become established pest species (Wilson 2016).

On 10 October 2016, a Least Chipmunk (*Tamias minimus*) was discovered in a residential area of Lincoln, Lancaster County, Nebraska. The closest populations of Least Chipmunks reside > 640 km to the west in northwestern Nebraska and southeastern Wyoming. The most parsimonious explanation for this unusual observation is that the chipmunk was transported to the city by humans. A likely scenario is that the chipmunk hitched a ride to Lincoln in a motor vehicle on 2 October 2016, when one of us drove 1500 km in a single day from Jackson, Teton County, Wyoming, after residing in that area for 10 days. To further support this hypothesis, the chipmunk ran multiple times to the wheel of a vehicle in the driveway when fleeing from a nearby birdfeeder in Lincoln. Seeking refuge in the wheel demonstrates that the individual was familiar with this unusual retreat and likely was a stowaway in the vehicle. We predict this dispersal event will not lead to an isolated, disjunct population in Lincoln.

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a relatively long tail, and five dark dorsal stripes. These are all characteristics of Least Chipmunks that help distinguish this species from other chipmunks in Montana and Wyoming (Long 1965, Foresman 2001, Buskirk 2016).

We suspect this Least Chipmunk was transported to the city of Lincoln by humans because the distance between the closest native population to the city is beyond natural dispersal distances by a non-volant, terrestrial small-mammal over inhospitable habitats. The most parsimonious explanation for this observation is that one of us (MLF) inadvertently transported the chipmunk to Lincoln on 2 October 2016, after driving about 1500 km in a single day from Jackson, Teton County, Wyoming, to Lincoln. Prior to this single-day trip, the vehicle remained in the Jackson area for 10 days. To further support this hypothesis, the chipmunk was observed fleeing from a bird-feeder either to nearby shrubs or to the wheel of a vehicle in the driveway in Lincoln. Seeking refuge in a wheel of a vehicle supports that the individual was familiar with this unusual retreat and likely was a stowaway in a motorized vehicle. We predict that this observation ultimately will result in a failed human-mediated dispersal event and will not lead to an isolated, disjunct population in Lincoln. Only a single chipmunk was observed, and even if the individual was a female, it is unlikely it was pregnant at this time of year (Jones et al. 1983, Foresman 2001).

Inadvertent human-mediated dispersal events likely are relatively common, but few introductions have documented when and how individuals were transported. Moreover, such dispersal events generally stand out when a species is moved large distances beyond their natural distributional limits. Dispersal by motorized vehicles is a known mechanism of dispersal (Miller Baker 1994, Hodkinson and Thompson 1997). In Nebraska, we are aware of at least one other likely inadvertent dispersal of a mammal by humans. On 20 September 1990, a Bushy-tailed Woodrat (Neotoma cinerea) was trapped from a building at Crescent Lake National Wildlife Refuge, which is out of the typical habitat and range for the species (Benedict et al. 2000). It seems that the individual was transported to the refuge when furniture was moved to the refuge from within the known distribution of this species. Such
examples demonstrate that vertebrates continue to be moved inadvertently, thus some of the purported natural range expansions reported in the literature might in fact represent those mediated by humans. Examples, such as the chipmunk in Lincoln, are easy to recognize as mediated by humans due to the extreme distance the species was from its natural geographical range. Shorter distances traveled by such inadvertent movements, however, will be less likely to be identified as accidental. Thus, knowledge of the natural history of species is important to first identify distributional changes, and also to distinguish between natural and human-mediated dispersal events.

**Literature Cited**


