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SHORTER CONTRIBUTIONS

NOTES ON *REITHRODONTOMYS HUMULIS* (AUDUBON & BACHMAN) REPRODUCTION IN WESTERN VIRGINIA

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ABSTRACT

As part of fall mammalian surveys at Radford University’s Selu Conservancy in Montgomery County, Virginia, we captured an adult female *Reithrodontomys humilis* (Audubon & Bachman) (eastern harvest mouse) in a Sherman trap on 14 October 2025. While in the trap overnight, she birthed four pups. Given the lack of reproductive data on eastern harvest mice in western Virginia, our findings confirm fall reproductive activity in this southwestern county, and we compare our finds to regional knowledge of the species.

Keywords: breeding, eastern harvest mouse, natural history.

To survey for small mammals at Radford University’s Selu Conservancy in Montgomery County, Virginia, we deployed 240 Sherman traps (H.B. Sherman, Inc., Tallahassee, FL) from 12 October 2025 - 14 October 2025. We set traps primarily in a fire-maintained 2.3-ha field planted in native warm-season grasses. We also set traps in adjacent seasonally bush-hogged fields and along forested edges. We baited all traps with a mixture of rolled oats and peanut butter, and included 1-2 jumbo cotton balls to help cold-intolerant captures survive cooler temperatures in a makeshift nest. Daytime high temperatures were 17-22° C and overnight temperatures dropped to ca. 10-12.5° C during survey nights.

On 13 October, we captured and released 3 eastern harvest mice (*Reithrodontomys humilis* [Audubon & Bachman]); 1 adult ♂, 1 adult ♀, 1 subadult ♂; Fig. 1A). On the morning of 14

October, we captured 6 eastern harvest mice - one of which was an adult female eastern harvest mouse not captured the previous day. Between trap checks (ca. 1700h on 13 October to 0830h on 14 October), she had birthed four live pups in the trap (Fig. 1B, C).

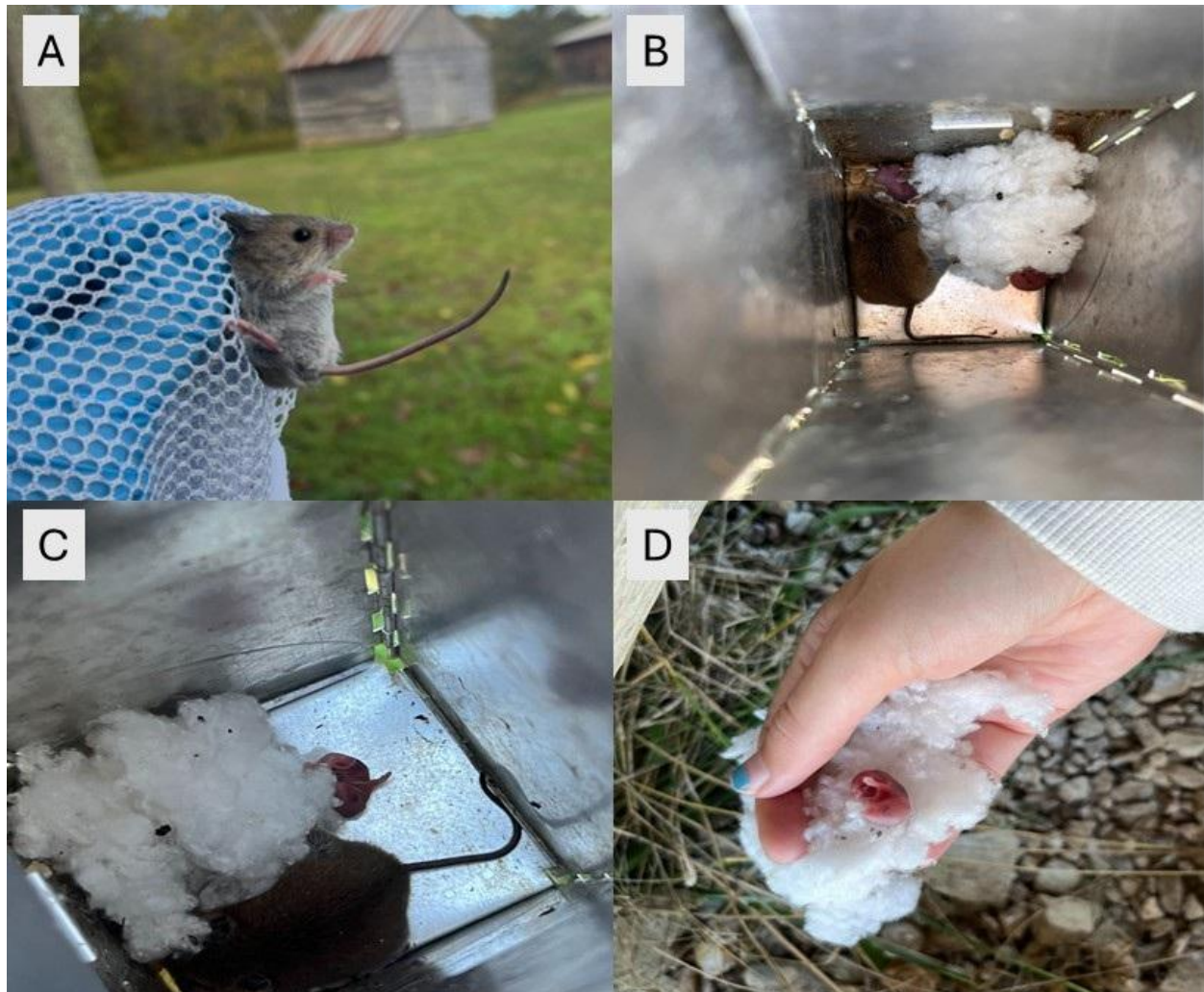


Figure 1. Images captured on 13-14 October 2025 of eastern harvest mice (*Reithrodontomys humulis*) at Radford University's Selu Conservancy, Montgomery County, Virginia: (A) adult male captured on 13 October; (B, C) adult female captured in Sherman trap on 14 October, having recently birthed four pups; (D) pups and shredded cotton were removed from the Sherman trap and transferred to a makeshift nest in an open-air shed, providing some protection from the elements.

When we discovered the pups, we first considered whether to release the female and her pups back to the wild or to transfer the pups to a wildlife rehabilitation center. Although harvest mice were not studied specifically, captive-reared small mammals may exhibit exceedingly low survival rates when released to the wild (e.g., as reported for Key Largo woodrats (*Neotoma floridana smalli* Sherman; McCleery et al., 2014). While it is possible to successfully release captured mammals, there is a high initial mortality rate (Greene et al., 2017). Cawthorn & Rose (1989) reported a 6% weekly mortality rate for adult eastern harvest mice post-capture and release, suggesting low mortality rates if the young could reach adulthood. We decided to release the

mother and her newborn pups for the best chance of survival for all individuals. To minimize stress to the adult female, we opted to not handle or measure her.

Consequently, we constructed a makeshift nest of leaves and grass under the shelter of an open-air wood-slat shed. We partially deconstructed the Sherman trap by removing one support wire, and set it down next to the nest. We did not disturb the trap for ca. 1.5 h. When we returned to the trap, the adult female had exited, but the pups remained. We manually removed the pups and placed them - plus the shredded cotton balls - into the makeshift nest. The altricial pups were ca. 3 cm long (Fig. 1D). We expected that the mother would return to the pups and hoped she would provide care for the next 20 days (Kaye, 1961).

Eastern harvest mice are present in habitats with warm-season grasses like *Andropogon virginicus* L. (broomsedge bluestem; Best & Hunt, 2020), and individual home ranges are limited to just 0.09-0.10 ha (Linzey, 2021). Because our fire-maintained field is planted in warm-season grasses, their presence is not unexpected. However, the sheer number of captures greatly exceeded captures from previous, similar trapping efforts at the Selu Conservancy. Powers has been surveying the Conservancy yearly since 2007, and just two individual eastern harvest mice were captured across 19 y (one each in 2018 and 2019; K. Powers, unpublished permit reporting). Our find of at least six unique individual captures, plus the pups, across two nights, was unexpected. Further, the subadult male captured on 13 October indicates successful fall reproductive efforts in prior weeks.

Because all published reproductive reports for eastern harvest mice are concentrated in eastern Virginia and for the subspecies *Reithrodontomys humulis virginianus* Howell, our reports of reproductive activity for *Reithrodontomys humulis humulis* provide new data for the western Virginia subspecies (VAFWIS, 2025). This female's reproductive effort appears to be in line with that reported for eastern harvest mice in southeastern Virginia. Reproduction is nearly year-round, although female harvest mouse weights - and presumed reproductive effort - peak in spring and fall months (Rose, 2019; Linzey, 2021). Average reported captive litter sizes ranged from 2.2-3.2 across reports (Layne, 1959; Kaye, 1961; Dunaway, 1968), with a typical range of 1-4 (Rose, 2019; Linzey, 2021). Therefore, despite differences in pelage coloration (Howell, 1940) and elevational differences across the Commonwealth, the reproductive efforts of both subspecies appear anecdotally similar. We will continue to survey the Selu Conservancy in future efforts. Additional captures of eastern harvest mice may help elucidate reproductive trends for this montane subspecies.

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