

STATUS REVIEW CRITERIA FOR THE EASTERN WOODRAT

Developed by the Endangered Species Protection Board

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Introduction

Recovery of the eastern woodrat (*Neotoma floridana*), currently classified as a state endangered species, is consistent with Objective 1.1.2.3 of the Department's Strategic Plan (Illinois Department of Natural Resources 2002) and its legislatively mandated responsibility to "take all measures necessary for the conservation, distribution, introduction and restoration of birds and mammals" (520 Illinois Compiled Statutes 5/1.10). The recovery plan for this species advocates an overall goal of insuring the long-term viability of the eastern woodrat in Illinois by increasing genetic heterogeneity of extant populations, establishing populations at sites where woodrats occurred historically, monitoring population levels, and managing key habitats (Bluett 2003).

Current Conservation Status of the Eastern Woodrat

The eastern woodrat is not listed as endangered or threatened at the federal level, nor is it proposed for such action. Illinois is the only state within the range of *N. f. illinoensis* that lists it as endangered or threatened.

Geographic Range and Density

Eastern woodrats occur throughout much of the southeastern and south-central United States. They are considered common to abundant in most of their range. Illinois occurs at the extreme northern periphery of *N. f. illinoensis*' range, which also includes portions of Missouri, Arkansas, Tennessee, Kentucky, Alabama, Mississippi, Florida and Louisiana. As recently as the early 1900s, woodrats were found at numerous sites in Jackson, Union, Johnson, Pope, Gallatin, Alexander, and Hardin counties. Studies conducted during the 1990s documented the woodrat's presence at only 5 sites in Jackson and Union counties; these small, isolated populations had experienced significant inbreeding and loss of genetic variation. Recovery actions were implemented during 2003 through the present (2008) and are expected to continue during the immediate future.

Considerations for Changing the Status of Eastern Woodrats in Illinois

1. Species included in the Federal list of Endangered or Threatened Species

Eastern woodrats are not federally listed as endangered or threatened.

2. Species proposed for Federal Endangered or Threatened status that occur in Illinois

Eastern woodrats are not being proposed for federal threatened or endangered status. As noted, they are generally considered secure throughout most of their range.

3. Species which formerly were widespread in Illinois but have been nearly extirpated from the state due to habitat destruction, collecting, or other pressures resulting from the development of Illinois

There is no historical evidence that eastern woodrats were widespread in Illinois. Extensive areas of forested habitat are maintained in the woodrat's historical range by the U.S. Forest Service, Illinois Department of Natural Resources, The Nature Conservancy, and other governmental and not-for-profit organizations. Ownership by these groups limits threats from development, although current policies that limit active silvicultural practices such as timber harvest may reduce overall habitat quality as forests continue to mature.

4. Species which exhibit very restricted geographic ranges of which Illinois is a part

The geographic range of *Neotoma floridana* is large compared to most species of North American mammals.

5. Species which exhibit restricted habitats or low populations in Illinois

In Illinois, evidence of the past presence of woodrats (i.e., stick nests) has generally been associated with rock outcrops or caves. These features are somewhat restricted in Illinois. However, their importance to woodrats might be overstated because of biases associated with the long-term persistence of nest materials in caves, crevices, overhangs or other sites protected from weathering and disturbance. Animals collected in Missouri and Arkansas for translocation to Illinois were seldom associated with rock outcrops or caves; most were captured near piles of brush from timber harvests or thinning and abandoned homes, outbuildings and agricultural equipment. Recent studies conducted in southern Illinois suggest that woodrats are able to traverse wooded areas not directly associated with rock outcrops and caves. Determining whether woodrats use such areas to establish home ranges is difficult because of logistical constraints.

Recent surveys at Pine Hills and Fountain Bluff documented population levels similar to those observed in the past. From 2003 to 2007, 341 woodrats were translocated from Missouri and Arkansas to 4 locations in southeastern Illinois: Garden of the Gods, Pounds Escarpment, High Knob, and Buzzard's Point. Known survival one month after release was 8.8% of individuals. We documented reproduction based on 56 unmarked woodrats subsequently trapped. These

were offspring of pregnant females introduced as well as naturally occurring breeding on site. We also used the Pine Hills population as a source for translocations to unoccupied sites. Recent studies suggest that juveniles usually disperse from Pine Hills and are essentially lost to the population through natural mechanisms. We also translocated 41 woodrats from various sites in Arkansas and Missouri to Pine Hills and 6 woodrats from 2 sites in Missouri to Fountain Bluff.

6. Species which are significant disjuncts in Illinois, i.e., the Illinois population is far removed from the rest of the species' range

Sites occupied by woodrats in southern Illinois are isolated from the nearest known populations 120.7 km (75 mi) to the west in Missouri and 136.8 km (85 mi) to the south in Tennessee.

Criteria for reviewing the status of the eastern woodrat

The proposed status review criteria represent measures of distribution and abundance to prompt the Endangered Species Protection Board to review the status of eastern wood rats and consider status changes. Status review criteria do not prompt an automatic change in status, and the Endangered Species Protection Board may review the status or status review criteria of the species at any time.

Illinois' Woodrat Recovery Plan (Bluett 2003) advocates the following criteria for recommending changes in the status of this species to the Endangered Species Protection Board for consideration:

Reclassify the eastern woodrat from state endangered to state threatened.

This objective is met when a stable or increasing metapopulation of ≥ 50 individuals (fall estimate) has been established in an unoccupied part of the woodrat's historical range on the eastern part of the Shawnee Hills Natural Division (i.e., Johnson, Saline, Gallatin, Pope, or Hardin counties) and persisted ≥ 4 years after translocations have ceased.

Delist the eastern woodrat from state threatened status.

This objective is met when (1) genetic heterogeneity of the Pine Hills metapopulation has increased, (2) a stable or increasing metapopulation has been documented at Pine Hills and associated sites for ≥ 4 consecutive years, (3) a stable or increasing metapopulation consisting of ≥ 50 individuals (fall estimate) has persisted on the eastern side of the Shawnee Hills Natural Division for ≥ 4 years after translocations have ceased, and (4) ≥ 2 additional populations consisting of ≥ 30 individuals each have persisted ≥ 2 years after translocations have ceased.

Literature Cited

Bluett, R. D. (editor). 2003. Eastern woodrat recovery plan. Illinois Department of Natural Resources, Springfield, Illinois, USA.