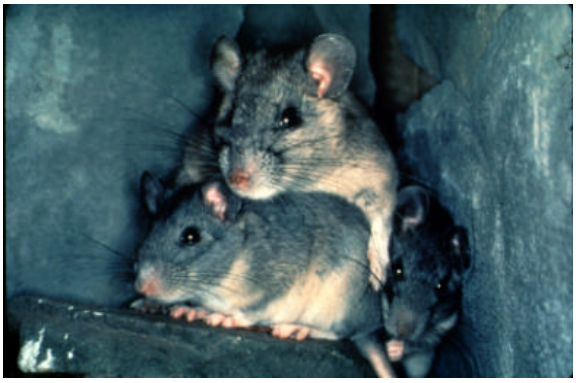
Allegheny Woodrat, *Neotoma magister*

Status: ***State:*** Endangered ***Federal:*** Candidate species

Identification



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The Allegheny woodrat is a medium-size rodent that superficially resembles the Norway rat, Rattus norvegicus, an introduced species that is common in urban areas and around farms. The Allegheny woodrat is most easily distinguished from the Norway rat by its larger, naked ears and its hairy, bicolor tail that is dark gray above and white below. Norway rats have scaly tails that are very sparsely haired. The woodrat's new winter pelage is a buffy gray color heavily overlaid with black. The hair along the midline is darker than that on the sides. The throat, belly and feet are white with creamy buff armpits (Hamilton 1963). During the winter months the pelage is slightly darker and longer fading to dull gray and brownish by March. Woodrats have four toes on the front feet and five toes on the rear feet. The sexes are identical in pelage color. Females have four mammae.

There is a longitudinal strip having little hair that runs the length of the ventral side. Glands located along this strip exude a strong-smelling oily pheromone during the breeding season (Poole 1940).

The head and body length in adults ranges from 8 – 9 in. The tails are shorter than the total head and body length and range from 6 – 8 in. Adult woodrats range in body weight from 200 – 385 gm. Adult males typically attain weights greater than 300 gm whereas adult females rarely exceed 250 gm.

Habitat

Allegheny woodrats typically occur in rocky areas associated with mountain ridges such as cliffs, caves, talus slopes and rocky fissures. The rocky barrens where they den are generally devoid of vegetation with the exception of the occasional tree that manages to survive among the rocks. Active primarily at night, woodrats leave the security of their rocky dens to visit adjacent areas to feed on the available vegetation. In general, food is less important in habitat selection than is cover. Rock outcrops must have numerous deep fissures and overhanging rocks and ledges.

In New Jersey, Allegheny woodrats occur in extensive talus fields at the base of rock outcrops. They are typically found in talus fields having large sized boulders (greater than 4 ft. in diameter). Vegetative associations include birch (Betula spp.)/chestnut oak (Quercus prinus) forests, scattered birch, oaks and shrubs with herbaceous plants at the base of slopes. The exotic paulownia (Paulownia tomentosa) tree is one of the dominant trees found growing among the talus slopes of the Palisades – the site of New Jersey's last remaining woodrat population.

Status and Conservation

Allegheny woodrat populations have experienced declines over the past 30 years, especially in the northern part of its range. Woodrats were considered extirpated in New York state by 1987 (Hicks 1989). Extensive surveys in Pennsylvania have revealed that woodrats declined in the northeastern portion of the state and have disappeared from approximately one third of their former range there. Similar declines have been noted in Maryland and Ohio.

In 1984 and 1985 the Division of Fish and Wildlife's Endangered and Nongame Species Program conducted surveys of three historic sites and 16 sites that had suitable habitat. No animals were captured, although old sign was discovered at several sites.

In 1982 two new populations of Allegheny woodrat were discovered at Picatinny Arsenal in Morris County and at the Palisades in Bergen County. The Picatinny Arsenal site has been considered extirpated since 1984, leaving the population at the Palisades the last remaining one in the state. The Allegheny woodrat was afforded protection under the New Jersey Endangered Species Act when it was added to the list as endangered in 1991.

The Palisades population has been monitored by live trapping since the mid-1980s. Trapping results indicate that the population has remained stable over the past several years.

The rapid decline of Allegheny woodrat populations throughout the northern portion of its range has caused much concern about the species' future. The declines have prompted researchers to begin examining the possible causative factors that have led to the declines. Much of this research has focused on the parasite Baylisascaris procyonis (raccoon roundworm), a nematode that can be fatal to woodrats.

In the early 1990s the New Jersey Division of Fish and Wildlife's Endangered and Nongame Species Program supported research by Kathleen LoGiudice that attempted to develop an effective protocol for reducing contamination of the environment with B. procyonis eggs. The technique involved treating infected raccoons with anthelminthic drugs delivered via baits. Although results of the study were inconclusive due to a lack of recaptured animals treated with the drug, a strong deductive argument was presented for the effectiveness of the technique. First, the baits containing the anthelminthic drug were constructed in a way that a raccoon could not consume the bait without getting a dose of the drug (piperazine). Secondly, it was shown in the laboratory that the ingestion of the drug reduced B. procyonis burdens and completely interrupted egg shedding for a period of about three weeks. Thirdly, captive raccoons showed no preference between untreated (cornmeal) and treated (piperazine) baits. This technique may provide an effective means of reducing raccoon roundworm egg deposition at woodrat sites during periods of peak egg shedding (Sept.-Nov.), thus reducing the threat of this parasite in woodrat populations.

The ENSP conducts annual monitoring of the Palisade population via live-trapping during the early fall. Trapping results between 1999 and 2001 indicate that this population has remained stable and may be increasing slightly. Annual monitoring of this population has become a priority due to the rapid decline and extirpation of the species from their former range in New York and portions of eastern Pennsylvania.