

Small Mammals & Forest Management



Ecosystem Health

This long-term wildlife monitoring project focuses on small mammals and has three main goals:

- To document the wildlife communities and habitat conditions in watershed forested areas
- To monitor the relative abundance, species richness, and diversity of the wildlife groups
- To determine if watershed forest management activities impact small mammal populations



Forestry Management on watershed lands involves the removal of trees to promote forest regeneration. Our forest openings range from 1/4—2 acres in size.

Tree removal disturbs the leaf litter and opens up the canopy, increasing sunlight to the forest floor, encouraging new young trees.

Healthy forests can better filter rainwater before it reaches the reservoir.

Indicators of Change

Small mammals play an important part in the watershed ecosystem.

They help to control invertebrate populations and spread plant seeds and fungi spores. Their tunnels provide homes for other organisms to use, and they are an important food source for many predators.

Due to their high reproductive rates, these small mammals respond quickly to environmental changes, including forest management.

This allows us to evaluate how forestry management practices impact the ecosystem.

Collecting Data

Our biologists have been studying wildlife communities at 30 long-term monitoring plots on a rotating basis since 2001.

In order to gather data for these studies, Sherman traps are used for trapping small mammals without harming them.

Stable Population

Data collection is ongoing. Data we've gathered so far is positive and suggests that small mammal populations are stable after forest management.

In fact, we noticed a slight increase in species diversity.

These preliminary findings are encouraging for our forest management programs' impacts to wildlife in that it shows that many species are able to adapt to the changes.





Sherman traps, a small metal box with a spring-loaded door are used for trapping small mammals without hurting them. Traps are baited with a peanut butter and oat mixture, and mealworms for the carnivores.

Small Mammal Species Monitored	
Common name	Scientific name
White-footed mouse	<i>Peromyscus leucopus</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Woodland jumping mouse	<i>Napaeozapus insignis</i>
Southern red-backed vole	<i>Myodes gapperi</i>
Meadow vole	<i>Microtus pennsylvanicus</i>
Woodland vole	<i>Microtus pinetorum</i>
Short-tailed shrew	<i>Blarina brevicauda</i>
Masked shrew	<i>Sorex cinerus</i>
Smoky shrew	<i>Sorex fumeus</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Red squirrel	<i>Tamiasciurus hudsonicus</i>
Southern flying squirrel	<i>Glaucomys volans</i>
Eastern chipmunk	<i>Tamias striatus</i>
Striped skunk	<i>Mephitis mephitis</i>
Long-tailed weasel	<i>Mustela frenata</i>

Increase in Diversity

Since 2016, about 15 different mammal species have been captured across the sites. A slight increase in species diversity was noticed.

These preliminary findings show that many species are able to adapt to the changes in the forest.

This is encouraging for our forest management programs' impacts to wildlife. Forest management is important to ensure our forests are healthy and continue to grow and filter rainwater for generations to come.



Peromyscus species is the most common. The second most abundant are red-backed voles, followed by short-tailed shrews.

A new study uses wildlife observation cameras set up in the forest. To see more, watch our Small Mammal Survey video on YouTube @MassDCR Water Supply Protection Playlist.



[youtube.com/c/MassDCR](https://www.youtube.com/c/MassDCR)

