

NORTHERN FLYING SQUIRREL state endangered species

Monitoring of northern flying squirrel sites, particularly in northern tier counties, has continued for nearly a decade. Long-term monitoring and research has allowed us to document some key findings. Coexistence and competition for resources between northern and southern flying squirrels in close proximity appears to increase parasite transmission, increase competition for food and nesting resources, and even cause some level of hybridization. Studies have shown that the diversity of conifer species is an important factor in producing mycorrhizal fungi. Specifically, red spruce is shown to have the most types of this food source and expand the time period it is produced, promoting the northern species.

PGC has been collecting, growing and planting native red spruce in active northern flying squirrel locations. Sites with a limited conifer diversity were targeted first, with nearly 5,000 seedlings planted to date. These plantings aim not only to establish this red spruce in active squirrel sites, but to expand and connect optimal habitats. Removal of mast-producing trees that benefit the southern flying squirrel reduces competition. Benefits from managing for red spruce will extend to other species of concern as well. Species such as the blackpoll warbler, yellow-bellied flycatcher and snowshoe hare are all known to inhabit the same rare habitat.



Endangered bird specialist Patti Barber collects red spruce cones.

Greg Turner/PGC



Jamie Flickinger/PGC

Because the areas woodrats inhabit are so isolated, they usually show little fear of humans, in this case allowing close observation of a kit by veteran PGC wildlife biologist Cal Butchkoski.

ALLEGHENY WOODRAT state threatened species

The Allegheny woodrat is a small rodent (but not a rat!) about the size of a gray squirrel. It inhabits talus slopes, boulder fields, caves and cliffs in hardwood forests along the Appalachian Mountains. In recent decades the woodrat has experienced a steep population decline attributed to loss of mast crops, forest fragmentation, increased predation and a parasite spread by raccoons.

Earlier, a series of three conservation-partner projects, funded by federal State Wildlife Grants, developed a management plan and a model for predicting population viability, and trained 90 resource managers to evaluate and enhance woodrat populations. PGC began implementing woodrat habitat management, primarily aimed at increasing forage, on selected state game lands in 2010. Diversity Division staff surveyed 26 Allegheny woodrat sites in 11 metapopulation areas in 2012. Of those 26 sites, 18 had active sign, five were inactive and three were potential sites with no woodrat sign. The area on a Dauphin County game land that received the earliest and most intensive management persists despite surrounding woodrat sites having little or no activity.

No metapopulation areas were reclassified from active to inactive as a result of 2012 surveys. That's good news considering eight metapopulation areas were reclassified from active to inactive between 2007 and 2010. In 2011, one metapopulation area became active, but much more work is needed to reverse the Allegheny woodrat population decline. Thanks to assistance from Indiana University of Pennsylvania, funded by a DCNR Wild Resource Conservation Program grant, PGC land managers are now implementing management on additional game lands.

POSITIVE ENERGY for the ALLEGHENY WOODRAT

Thanks to funds provided by **Pennsylvania General Energy Company, LLC**, woodrat management has been implemented in DCNR's Tiadaghton State Forest.

From January to November 2012, Wildlife Specialists, LLC completed habitat improvements at nine management compartments.

ROAD to RECOVERY

In 2012, PGC selected two complementary projects for State Wildlife Grants Program funding. An Allegheny woodrat genetic catalog by Indiana University of Pennsylvania will guide near-term management as well as future releases of woodrats from the captive breeding program at Delaware Valley College.

The photograph on the left was taken at the captive breeding facility. Red lighting is used to minimize disturbance to the woodrats.

