

## **Bobcat, *Lynx rufus***

**Status:**

***State:* Endangered**

***Federal:* Not listed**

### **Identification**

The bobcat is a medium sized-cat, about two feet tall — larger than a housecat, but much smaller than a cougar or lion. Adult females in NJ generally weigh between 18 and 25 lbs. while adult males can weigh as much as 35 lbs. Their fur ranges from yellowish brown to reddish brown and bears markings that vary from ‘tabby’ stripes to heavy spotting. They possess slightly tufted ears and a short bobbed tail (between three and seven inches long) that is black above at the tip. Generally they hunt both by night and day, although there is evidence to suggest that most hunting takes place at dawn and dusk. They are extremely shy animals that are seldom seen by humans although as numbers have increased in northern parts of the state more and more people are seeing bobcats.



© Keith R Frerichs

### **Distribution and Habitat**

The bobcat is restricted to North America, and is found in coniferous and mixed forest in the north, swamp and coastal areas in and around Florida, and desert and scrubland in the southwestern United States. They are absent in the highly cultivated areas of the northern mid-western states, and were once widespread and common in New Jersey, probably occurring in all counties. Massive deforestation, development and changes in agricultural practices since the turn of the century have led to its decline in some areas of the country. However, a recent range-wide status assessment conducted by researchers at Cornell University and the University of Montana reported that bobcat numbers are on the rise. Currently, bobcats are listed as an endangered species in NJ.

### **Diet**

Bobcats prey on rabbits, mice, squirrels, ground-nesting songbirds, turkeys, and even small or sick deer. They only eat about 3 pounds of meat at a time, so if they manage to catch a larger animal, they will drag it to a safe spot, cover it up, and return later to feed again. They have excellent vision and hearing, and use these senses most in hunting. The soft pads on their feet help them sneak up quietly on their prey.

### **Life Cycle**

Bobcats like to den in crevices in rocks, under fallen logs, in thick tangles of vegetation or under the root mass of a fallen tree. They generally breed between February and June, and have a litter

size of 1-6 young (2-3 is typical) that are born after a gestation period of approximately 60 days. The spotted kittens are weaned at about 12 weeks. As the kittens are weaned, they begin eating meat that the mother brings back for them. Later, she will bring live animals (like mice) back to the den, so the kittens can practice hunting. A bobcat becomes independent of its mother at about 10-12 months of age, and may live 12-13 years in the wild.

## **Management & Research**

In New Jersey, European settlement brought hard times for bobcats. Early settlers hunted and trapped them for their pelts and changes in land-use occurred that were unfavorable for bobcats. The greatest blow to the once large population was the massive deforestation that occurred here at the turn of the century. As forests were cleared for lumber, fuel and charcoal, and land was converted to agricultural use, bobcat habitat became fragmented. As NJ's human population grew, along with roads and development, bobcat habitat became even more fragmented. Populations became isolated and plummeted. Scattered reports of bobcats being seen or killed on roads continued throughout the 1950s and 1960s, and the species was listed as endangered in NJ in June of 1991. Today, roads and fragmented habitat in NJ prevent extant populations from returning to previously occupied habitat in central and southern NJ.

The NJ Division of Fish and Wildlife conducted a restoration project where 24 bobcats captured in Maine were released in northern New Jersey from 1978-1982. By the 1990's reports of bobcat sightings began to increase. Today, bobcat reports from northern NJ are on the increase. Unfortunately, so are the numbers of bobcats killed by automobiles on our highways. During a one year period between 2008 and 2009, fourteen bobcats were observed on NJ roads and ten of these were hit by cars.

Since 1991, the Division's management efforts have led to consistent bobcat sightings from an increasingly larger area of northern New Jersey. Most sightings continue to come from Warren, Sussex, Passaic and Morris counties but there have been scattered, recent sightings from Bergen and Hunterdon counties. Bobcats are difficult to study because they exhibit elusive behavior, occur at relatively low densities, and have large area requirements. Yet, monitoring of population characteristics (e.g. size and sex ratio) and distribution are essential components needed to develop and implement a recovery plan for the species. In recent years, biologists have used a few different methods in an attempt to gather this information.

In February of 1997, biologists conducted a pilot project to determine if bobcats could be tracked using radio telemetry. They captured three adult male bobcats and fitted them with radio collars. Biologists use telemetry data to track bobcat movements and help them determine the kind of habitat they use and the size of their home range. The information from this study provides important data necessary to protect the habitat needed for bobcats to survive in New Jersey. In recent years new technology has improved our ability to track bobcats in NJ. Both satellite and GPS collars have been used to track bobcat movements since 2002. These collars provide biologists with a tremendous volume of "fixes" or location information during the life of the collar and the locations are accurate to within a few meters. This represents a vast improvement in data quality and quantity over the older radio collars. In addition, the GPS locations are

gathered without biologists having to spend hundreds of hours in the field tracking the animals. All of the location data is stored on the collar and is downloaded directly to a computer.

In late 2005 ENSP contracted with Working Dogs for Conservation to acquire Bear, a professionally trained detection dog who is used to locate and alert biologists to bobcat scats. DNA can be extracted from sloughed intestinal cells contained in scat and can provide a wealth of information. DNA analyses of scat allow biologists to identify individual animals, their sex and movements. Systematic surveys conducted in northern New Jersey by the dog-handler team since 2006 have resulted in 487 bobcat scats from 174 different bobcats. The DNA data from scats as well as tissue samples we collect from bobcats that have been killed on the road, accidentally trapped, or trapped by ENSP in order to fit with GPS collars, are being fed into a capture-recapture analysis. The analysis will provide us with an estimate of sex ratio, population size, density and survival rate of the bobcat population over time.

In addition, we are using the dog-handler team, remotely triggered cameras, and GPS collar data in selected areas of northern NJ to examine roadways as a barrier to bobcat movements between suitable habitats. The goal is to identify road segments where we can focus efforts to provide safe passageways for bobcats across roadways and reconnect habitat.

In recent years ENSP biologists have been working with colleagues from New York, Pennsylvania, and Maine (the source of the 24 bobcats for NJ's restoration project between 1978 and 1982) to obtain bobcat tissue samples for a regional genetic variability study. This study is aimed at understanding the genetic structure and origin of the New Jersey population in hopes that this information will help inform a New Jersey bobcat recovery plan effort that we are currently developing.

The constant threat from habitat loss and fragmentation, changes in land use, the existence of barriers to free movement between suitable habitats and automobile collisions on our busy and abundant roadways will likely limit the growth of NJ's bobcat population unless we can effectively reconnect areas of suitable habitat and enable them to move safely through the landscape.