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pinelands guide



Guide to New Jersey
PINELANDS

VERTEBRATES OF THE PINE BARRENS by Robert W Hastings

Listing of Dominant or Distinctive Vertebrates of the Pine Barrens

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As an environment for most vertebrates, the Pine Barrens of New Jersey do indeed tend to be "barren". The area's physical and resultant biotic characteristics create a relatively harsh environment with low habitat diversity. This limitation of habit at types limits the variety of animals occurring there. Even man (prior to recent times) has found the area of limited value as habitat. Where as most of New Jersey is heavily cultivated or urbanized, the Pine Barrens have been neglected due to their un desirability and have become a remnant of what is now a very precious commodity, "wilderness".

Three major habitat types are found in the Pine Barrens:

- (1) the upland pine-oak forests,
- (2) lowland cedar-sphagnum bogs, and
- (3) aquatic streams and ponds.

Most vertebrate groups are not common in these habitats and the number of species occurring here is less than in the remainder of New Jersey. Fishes and amphibians are especially limited in number of species. However, some species are well adapted to environmental conditions in the Pine Barrens and are numerous there, even though rare elsewhere. Only about 15 species of fishes are common in typical Pine Barrens waters (out of a total of about 100 species for New Jersey). Of the approximately 30 species of amphibians occurring in New Jersey, only about 10 are common in the Pine Barrens. This paucity of aquatic or amphibious vertebrates seems to be related to the extreme acidity of the Pine Barrens cedar water. Most freshwater fishes can tolerate acid levels only as great as pH 5.0 while Pine Barrens waters range from pH 3.6 to 5.2. Most amphibian eggs and larvae are also sensitive to high acid levels. In contrast, the species of fishes common here are tolerant of acid waters, as are certain amphibians (Pine Barrens Treefrog and Carpenter Frog). Other common Pine Barrens amphibians breed in altered situations where acidity may be less extreme (such as in abandoned gravel pits). Other fishes occur in peripheral Pine Barrens locations where acidity is buffered by soil characteristics, pollution, or other factors.

LOCAL & STATE RESOURCES

- Batsto Village
- Cranberry Growing In Burlington County
- Cranberry Recipes
- Jersey Devil of the Pine Barrens
- Jersey Devil Legend
- New Jersey Pinelands
- Comprehensive Management Plan Summary
- Photos of the Pinelands
- Pinelands Commission
- Pinelands National Reserve
- Pinelands Preservation Alliance
- Pinelands Recreation Guide
- Pineylore
- Pineypower
- Plants of the Pinelands
- Tree Frogs in the Pine Barrens

The most distinctive fish of the Pine Barrens is brightly-colored Blackbanded Sunfish. Although it occurred at one time in the Trenton area, it now seems restricted to New Jersey to the Pine Barrens where it is common in vegetation at the margins of lakes and backwaters of streams. Another interesting Pine Barrens fish is the Eastern Mudminnow. It is widely distributed in New Jersey, but is most common in the Pine Barrens where it remains hidden in dense vegetation or detritus. It is of particular interest as a facultative air-breather. Although it has gills for breathing water, it can also survive during periods of stagnant water by using its gas bladder to breathe air. The only potential game fish in typical Pine Barrens waters is the Chain Pickerel (other species such as Largemouth Bass are in peripheral areas and trout are stocked in some lakes). The elongate, duckbilled snout of the Chain Pickerel is an adaptation for feeding on other fishes, but the Pine Barrens limited availability of open-water prey species makes it dependent upon less desirable foods such as dragonfly larvae and crayfish.

Few salamanders are common in the dry sandy Pine Barrens soils. Aquatic larvae of the Red Salamander are frequently found in Pine Barrens streams; adults

- Wharton State Park
- Whitesbog Village



probably remain near these streams' margins or in bog areas. Some gravel pits support populations of Marbled and Tiger Salamanders. The completely terrestrial Red-backed Salamander may be common in places, especially in peripheral areas.

Among the frogs, the Southern Leopard Frog, Green Frog and Fowler's Toad are abundant in the Pine Barrens (and throughout the state). The Carpenter Frog and Pine Barrens Treefrog are most characteristic of the area since they do not occur elsewhere in the state. The Carpenter frog is commonly found around larger rivers, lakes, and cranberry bogs; the Pine Barrens Treefrog is found in cedar bogs where it breeds in small acid pools or slow moving streams.

Reptiles are rather common in the Pine Barrens, in contrast to the other groups of vertebrates. Of approximately 35 species occurring in New Jersey, about 30 have been recorded here. The most common turtles are the terrestrial Box Turtle and the semiaquatic Painted, Spotted, and Snapping Turtles. Stinkpot and Red-bellied Turtles are also frequently seen. All three lizards known to occur in New Jersey have been recorded in the Pine Barrens. The most characteristic species is the Eastern Fence Lizard, commonly called the Pine Lizard. Its gray, mottled coloration is strikingly similar to the bark of the pine trees it climbs for refuge when threatened. The most common snakes are the Pine Snake in upland areas and the Common Water Snake along streams and lakes. The Scarlet Snake, Black Racer, Corn Snake, Eastern Hognose Snake, Common Kingsnake, Milk Snake and Rough Green Snake are also common. The area's sandy soil is especially significant as habitat for burrowing forms such as the Pine, Scarlet, Hognose and Worm Snakes. The poisonous Timber Rattlesnake occurs in the Pine Barrens, but is not common.

A total of 410 species of birds have been sighted in New Jersey, but only about 150 have been recorded from the Pine Barrens. A mere 50 of these are common, apparently due to the lack of habitat diversity. An abundant bird is the Rufous-sided Towhee, often seen noisily searching for food in fallen leaves or singing from a prominent perch. Other common birds of upland areas are the Blue Jay, Carolina Chickadee, Pine Warbler, Prairie Warbler, Black-and-White Warbler, Ovenbird and Brown Thrasher. Ruffed Grouse are often seen and introduced Bobwhite Quail may be common in places. In low areas of dense vegetation along streams or rivers live Catbirds, Yellow Warblers, Yellowthroats, American Redstarts and Field Sparrows. Herons, egrets and ducks live on rivers or lakes; Redwing Blackbirds, Swamp Sparrows and Song Sparrows live among the emergent vegetation surrounding lakes.

Mammals are relatively well-represented in the Pine Barrens. Of about 50 terrestrial species occurring in New Jersey, 34 occur here. However, only 20 or so are common. A conspicuous mammal is the White-tailed Deer. In recent years, state wildlife reports indicate deer have become so numerous in the Pine Barrens that their growth is retarded by crowding and they have caused some tree damage. The present population is descended primarily from introduced animals since deer were almost extinct in the Pine Barrens by 1900, the result of over-hunting. The Eastern Cottontail Rabbit is also conspicuous throughout the Pine Barrens. Other mammals may be common but are rarely seen due to their secretive nature. Eastern Moles and Masked Shrews are common burrowers. Red squirrels are present throughout the Pine Barrens; gray squirrels are more characteristic of peripheral areas. Southern Flying Squirrels are common but rarely seen. Several small rodents such as White-footed mouse, Woodland Vole, Gappers Red-Backed Mouse, and Meadow Jumping Mouse are common, the first two characteristics of upland areas and the last two of lowlands. Beavers are now found along large rivers and streams, although the original population was extinct by 1820. Beavers are rarely seen, but evidence of their presence is the gnawed trees along rivers such as the Batsto, Mullica and Oswego. River Otters and Long-tailed Weasels are also rarely seen but present along streams. Raccoons and Gray Foxes are common throughout the area.

There are no vertebrate species strictly confined to the Pine Barrens, but the area does support a rather unique community of plants and animals not found elsewhere in New Jersey. Many characteristic species are southern species which reach their northern limit in New Jersey. In several cases, species occurring in

the Pine Barrens are regarded as Endangered or Threatened in New Jersey, or throughout their ranges in a few cases (Pine Barrens Treefrog and Bog Turtle). The protection afforded by such recognition is necessary to save these species from extinction, but the protection of such organisms' natural habitat is of even greater importance. Human development now threatens the Pine Barrens as it has previously threatened (and then destroyed) other natural areas in New Jersey. Maintaining a large, relatively-undisturbed portion of the Pine Barrens is necessary to preserve its fauna since most wild animals cannot survive in close association with man.

Aquatic habitats and the organisms they support are especially vulnerable to human disturbance. Protecting complete drainage systems may be necessary to preserve the unique acid-water fauna of the Pine Barrens. There is some evidence that modifying streams by sewage disposal or agricultural run-off has resulted in establishing populations of species not common in the Pine Barrens and reducing populations of typical Pine Barrens species. Such reductions may result in part from competition by the invading species which cannot survive or reproduce in acid waters.

In their natural state, the Pine Barrens are of little economic value and pressure is great to allow commercial interests to reap the harvest of residential development. The aesthetic and scientific values of the Pine Barrens are priceless, however, and merit our protection. They have survived thus far because of their supposed lack of value; let us now protect them for their uniqueness-their value is beginning to be recognized and appreciated.

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