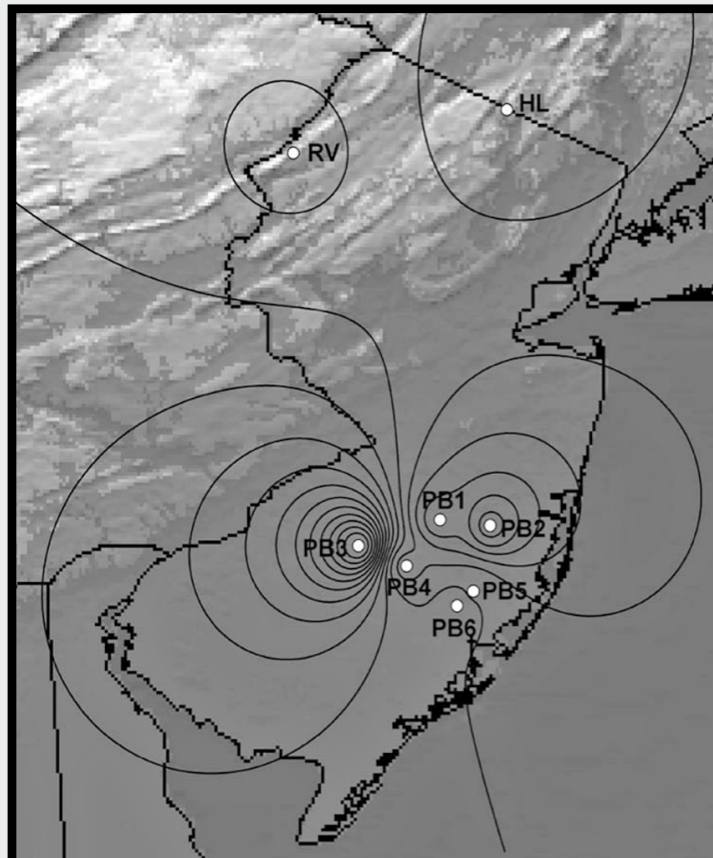




Timber Rattlesnake (*Crotalus horridus*)

Many people are surprised (and kind of alarmed) to learn that rattlesnakes live in New Jersey. Evolution has done its job, then, because these animals far prefer to go unnoticed. Timber rattlesnakes are creatures of the deep woods. They're calm and well-camouflaged with the forest floor, relying on sit-and-wait hunting tactics while trusting that predators won't see them either. Like all rattlesnakes, timbers have the trademark rattle, which is made up of loosely interlocking segments of keratin. Timber rattlesnakes are generally pretty shy with their rattling, though – they keep quiet and try not to draw attention unless they feel truly threatened.



Locations of the eight populations of timber rattlesnakes examined in this study (white circles). Contours are from a factorial correspondence analysis of the allelic frequencies among populations. (Bushar et al., 2015)

Timber rattlesnakes are also quite rare. They are an endangered species in several northeastern states including New Jersey, where they're found in the rugged, mountainous portions of the Appalachian region as well as in the Pine Barrens of the Coastal Plain. Timber rattlesnakes have long suffered the effects of human persecution and collection, and habitat loss and fragmentation have tightened the pinch. Now, researchers from Arcadia University and the College of New Jersey have found that paved roads are acting as isolating barriers between populations in the NJ Pine Barrens (Bushar et al., 2015).

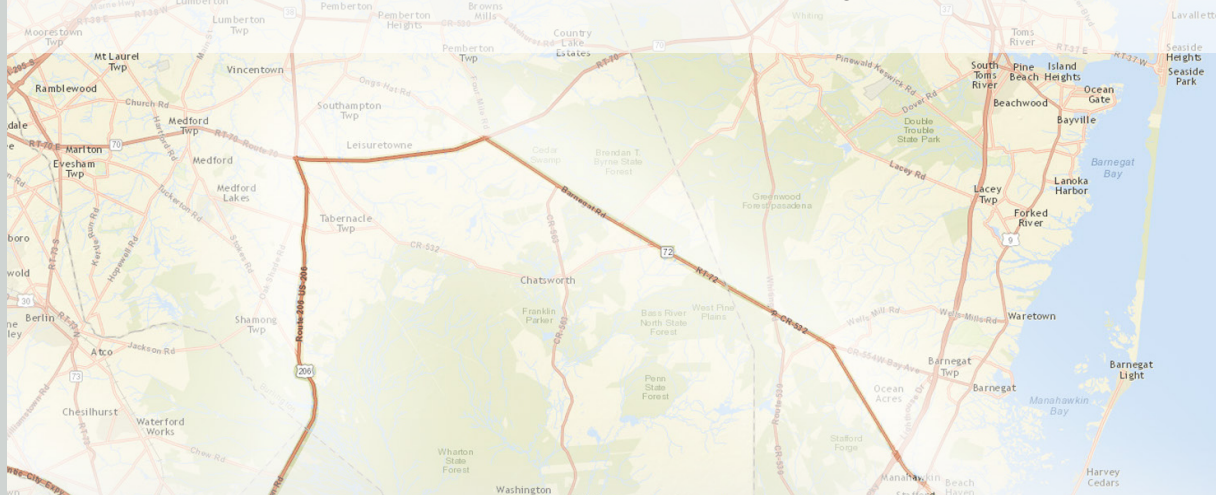


Timber Rattlesnake

In their study, the authors examined timber rattlesnake microsatellite DNA from six known populations in the Pine Barrens and two in the northern part of the state. Their goal was to measure the “genetic distance” between these populations based on the genes they share. The results show that the eight sampled populations represent four distinct genetic subgroups with little gene flow between them; the two northern populations comprise one subgroup, while the six Pine Barrens populations are broken into three additional subgroups.



Photo courtesy of MacKenzie Hall



The distance between the mountain rattlers and their Piney cousins was expected. But geography couldn't explain the genetic fragmentation in the Pine Barrens. As it turns out, the dividing lines are roads, and the more paved roads between populations, the bigger the genetic distance. U.S. Route 206 and NJ Routes 70 and 72 are clear barriers in the analysis. With more than 10,000 vehicles per day on these roads, the chance of a timber rattlesnake making it to the other side is virtually zero. The authors recommend efforts to restore connectivity. We agree...CHANJ is needed!

By MacKenzie Hall and Bill Pitts, ENSP

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Photo courtesy of [Clinton & Charles Robertson](#)