

Risk behavior of *Peromyscus* spp. in clear-cut, saw timber, and mature forest stands

Author: Diana Saintignon

Major: Forestry, Fisheries, and Wildlife

Project Advisor: Robert Gates

According to the optimum foraging theory, organisms attempt to maximize their net energy intake per unit time by using the least amount of energy to consume the highest quality of food. The point at which the costs (predation) of foraging at a location outweigh the gains to be had will often result in the organism abandoning the site. In this study foraging cost of predation on *Peromyscus spp.* across three sets of three successional stages; clear cuts, saw timber and old growth forests are compared in attempts to understand how human harvesting techniques impact prey behavior. It was hypothesized that clear cuts with the highest percent of ground cover will have lower GUDs. *Peromyscus spp.* are an important food source for the state endangered bobcat and the Eastern rattlesnake so results may prove useful for their management. Five food trays were placed at random intervals along 200 ft transects at each successional stage with three replications. Each feeding station consisted of a track pad and an aluminum pan filled with 1 liter of sand and 5 grams of millet seed. A weight proportion of grams of millet left from the initial amount resulted in the giving up density (GUD) at that tray. While GUD varied between stands, saw-aged stands appeared to have had risk behaviors practiced in lower levels than in clear-cuts and mature-aged stands, despite cover measurements that suggest the saw-aged stands had the lowest cover. Variation in GUD could have been caused by a variety of factors that are difficult to control for such as locally more preferable food or removal of food from trays to eat in a more desirable location.