

## **Population structure and distribution of Black Bears in Nova Scotia.**

Year end report: Nova Scotia Habitat Conservation Fund (contributions from hunters and trappers).

Soren Bondrup-Nielsen  
Dept. of Biology  
Acadia University

The black bear (*Ursus americanus*) appears to be doing well in Nova Scotia. It is “green-listed” with NSDNR meaning that it is not believed to be at risk. However, there are few studies of black bears in the province. Anderson (1984) compiled all the data from DNR on black bears and analyzed productivity and management; Macmichael (2007) conducted a habitat suitability study of bears in Cape Breton; Fudge *et al.* (2007) analyzed DNR records of road-kills of large mammals in Nova Scotia and found for bears that on average 33 were killed per year on highways between 1999 and 2003. They estimated that this represented 0.5% of the bear population in the province placing the population at about 6600 animals. There is concern that there is an increase in bear/human interactions and thus this study was initiated.

During this first year of funding support from the Nova Scotia Habitat Conservation Fund (contributions from hunters and trappers) three major objectives were achieved. An extensive literature search and summary report on black bear ecology was completed. Secondly, all the data collected by DNR on bears in the province including harvest statistics, wildlife incident reports, reproductive data, death due to different mortality factors, and more were compiled and summarized. Finally, the methodology for analyzing eight microsatellite markers was successfully developed.

Across North America, where habitat is available, black bear populations are doing well. They are an adaptable species and appear to be minimally impacted by humans. Black bears are primarily herbivores although they may kill and eat deer and moose fawns. However, as herbivores, bears do not generally come into conflict with human interests. However, in agricultural areas bears may become a nuisance eating crops like corn and blueberries or destroying beehives. To effectively manage bears one must know about their ecology, especially movement and home range size.

DNR collects various data on a variety of animals in terms of wildlife incidence reports, harvest statistics, reproductive parameters and more. In the past these data were recorded on paper and stored away and more recently data were entered into spreadsheets and stored electronically. Often certain data are only collected for a certain number of years or methodology changes. However, these data when digitized and analyzed and can yield important insight in to trends and can be important for management.

Abundance, distribution and movement of animals are essential variables if we are to understand human wildlife conflicts. Such data are often obtained by attaching radio or GPS collars on animals, however this is costly at about \$5,000 per GPS collar and the need for many animals collared to get a reliable estimate of movement and distribution makes this approach prohibitive. The same data can be obtained by analyzing molecular genetic markers. From this first year of study we have now developed eight microsatellite markers for black bears in Nova Scotia that can be used to identify individuals.

With the information collected and tools developed, we are now at a stage where the population of bears in Nova Scotia can be studied to understand bear ecology and subsequently develop management strategies to mitigate human/bear interactions.