

DNR Collared Bears Provide Cornerstone of Bear Management

Minnesota has been a leader in bear management. We were the first to institute a limited permit system for bear licenses (in 1982), which controlled hunting and allowed the population to increase. Using collared bears, we pioneered methods to estimate the statewide bear population (with tetracycline laced-baits, rib samples from hunters, and ages from teeth of harvested bears). We also discovered a method of ascertaining reproductive histories of bears from the rings in their teeth, and we use this information (from teeth of harvested bears) to guide harvest rates in each bear management unit. Data from a long-term study of radio-collared bears has provided the core of information used for setting harvest quotas.

Presently the Minnesota DNR is conducting further management-related research based largely on radio-collared animals. A few interesting findings are as follows:

- **Reproduction:** The highest reproductive rates occur near the fringes of the Minnesota bear range, where oaks, hazelnuts, and crops are most plentiful. Better fall nutrition leads to higher reproduction (larger litters, earlier age of maturity). The proportion of bears having large litters (4 or 5 cubs) has increased during the past 30 years (the duration of our study).
- **Mortality:** More than 80% of Minnesota bears die from hunting. Very few bears, other than cubs and some very small yearlings, die from natural causes. Thus, by controlling the harvest, we have direct control of the population. Winter conditions do not impact bear survival, and food conditions the rest of the year affect survival only because hungrier bears are more likely to be killed by hunters or as nuisances. If fewer collared bears were killed by hunters, we could learn more about other causes of bear mortality.
- **Nuisance activity:** Bears become nuisances when they cannot find adequate food in the forest and then find human-related foods as a substitute. Males tend to be bolder and therefore more likely to use human foods; they may even socially exclude females from cropfields. But when food conditions are poor, females also readily seek human foods. We are presently using GPS-collars on bears to track their routes of travel. We have learned that some bears follow circuits, where they revisit a series of houses on a periodic basis after receiving food rewards. Other bears find refuge in a small patch of forest, and night after night come out to feed in the same cropfield or other concentration of human-related food.
- **Movements:** Bears in some parts of northern Minnesota go on seasonal migrations: they tend to move southward in fall. They move individually, but several bears are able to find the same rich food sources in places that are well beyond their normal home range. We suspect that they use environmental cues in their local area to decide whether and when to move, and also follow scent trails of bears around them. Although essentially solitary, bears seem to gain knowledge as a “group,” and rely on wiser, older animals for information. Bears that migrate have better survival during the hunting season because they are more wary of hunters’ baits (human scent) when outside their familiar home range.
- **Lifespan:** Although most bears in Minnesota are killed before they reach their 4th birthday, some live much longer. It appears that this is not by chance, but that some individuals are really much better at avoiding risky situations with people. One collared bear, which has been tracked continuously since she was 7 years old (1981) is now 37 – this is the record age for a wild black bear in North America. If nobody shoots her, we will be able to see how long a bear can live without human interference.

Hunters Asked NOT to Shoot DNR Collared Bears

Although it is legal to shoot collared bears, hunters are asked not to do so. It is difficult or impossible to replace some of these research animals, and the data they provide, especially during the fall, is invaluable to bear management.

DNR collared bears occur mainly in northwestern Minnesota (no-quota area), the Chippewa National Forest, near Camp Ripley, and near Voyageurs National Park. However, they may roam widely and occur in other areas as well.

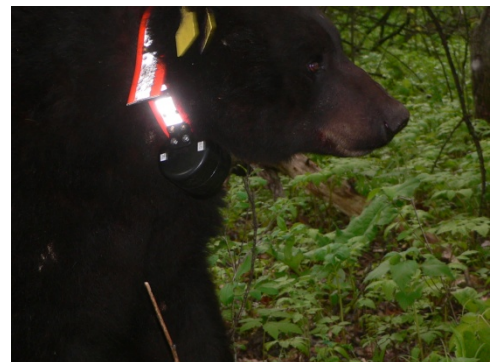
All DNR research bears with functional radio-collars have large, colorful eartags. Hunters are asked not to shoot bears with such eartags, even if the collar is not visible (e.g., covered by hair).



Bright tags visible through brush
(37-year-old female)



Bears with readily visible tags and collar



Markings visible in low light conditions

If You Shoot a Collared Bear

If you shoot a collared bear, researchers need to know as soon as possible, and also need to retrieve the collar. Many of the collars have valuable GPS data stored inside.

- Leave the radio-collar at a registration station, along with your name and phone number.
- Mail the ear tags in the tooth envelope.
- Call DNR Wildlife Research in Grand Rapids:

Office – 218-327-4146 or 4133

After hours (home) – 218-328-5172 or 218-492-4504

Thank you for your cooperation.

Areas with most DNR collared bears are highlighted below

