

# THE THREE BEARS OF KAWISHIWI RIVER

*Researcher learns lots about Minnesota black bears, GBF helps*

By Deborah L. Yarmark and Lynn L. Rogers

In northeastern Minnesota there are three very unique black bears. Terri, Gerry, and Mary are studied by the USFS North Central Forest Experiment Station – Kawishiwi Field Lab. These bears are so unique because they are the only bears in the world that are wild and yet allow researchers to observe them at very close range – often only a few feet away. In scientific terms, they are referred to as "researcher habituated" bears.

We plan to give quarterly updates in BEAR NEWS on the three bears and what they are teaching us. For this first update, here is a little background. This study is a continuation of a 24-year study by Lynn Rogers in which researcher habituated bears have been used for the last 6 years. The primary objective of the close observation is to learn which parts of the forest are of greatest importance to black bears. Forest managers incorporate this information into forest management policies to benefit black bears in the Great Lakes Region. The researchers use a field computer to document each activity in each habitat and to count the bites of each food. The bears essentially ignore the ever present researchers and go about their business of foraging, napping, nursing their cubs, and remaining alert to distant, unidentified sounds.

The study is providing an understanding of more than habitat use and diet. The bears reveal details of communication methods, sleep patterns (e.g., REM and non-REM sleep), movements, bioenergetics, and the relationship between territoriality and kinship. This new "Dian Fossey" approach to black bear research has made previously unknown information easy to obtain.

One of the bears, Gerry, was adopted by Terri as a 3-month-old cub. Gerry had been abandoned by her natural mother

after people harassed the mother in her den. Gerry was in captivity for nearly a month while wildlife officials searched for a hibernating wild mother who could adopt her. Terri was the bear. The result of being in captivity for that short time was that Gerry will accept touching. She is now two years old and is opening doors to types of bear knowledge not obtainable with the other habituated bears. For example, a person can take Gerry's heart rate at any time while she forages or sleeps. Gerry is revealing that bears begin to slow down earlier in fall than was previously suspected. It also takes them longer in spring to reach summer heart rates than was previously thought. These periods of "walking hibernation" are more than a month long. Gerry also allows people to take her fur temperature, skin temperature, and (with protest) her rectal temperature. She is revealing why black bears cannot stay too long in the sun. The temperature at the tips of her fur sometimes exceeds 185 degrees Fahrenheit in direct sun. Under this condition, her rising body temperature soon drives her to shade and water.

Terri, now 6 years old, has her second litter – 2 fast-growing males that weighed 10 pounds by the beginning of April. She has shifted her territory a bit south this year, leaving the north portions of her territory to her 2-year-old daughters Mary and Gerry, who each has her own growing territory.

Research technicians and Earthwatch volunteers are following the bears and radio-tracking their radio-collared neighbors to learn more about patterns of habitat use and social interactions. In addition to the patterns, day to day incidents are providing details of bear behavior and needs. Findings include:

\*Terri selects white pines, with their sturdy, rough bark as the locations of choice to leave her cubs while she forages nearby.

\*A previously unknown early spring food was snow fleas which the bears found by the thousands under moss and forest litter. It looked like the bears were just licking the ground because the tiny snow fleas could not be seen without looking very closely.

\*A cub fell approximately 40 feet from a tree and survived.

\*After a wolf cruised by, Terri and her 4-month-old cubs stopped foraging and hurried away.

\*Tent caterpillars are again abundant, and the bears are eating thousands of them. This is the third year of defoliation by these caterpillars and the bears keyed in on them several weeks earlier than they did when the caterpillars were unfamiliar in early 1989.

\*There is an open territory to the northeast of Terri's territory where two females were removed last fall. The territory is being checked out by both Gerry and Mary.

\*Even with cubs, Terri accepts human presence just as she did before.

\*Blood samples from non-habituated bears in this study are revealing that black bear cholesterol levels are high but that the cholesterol is of high quality. This may explain the black bear's lack of heart and circulatory problems. For example, a hibernating bear with a total cholesterol of 209 had an HDL level of 115 and an LDL level of only 50 – almost the reverse of ratios found in people. More detailed studies are being developed.

The research is going well. The State of Minnesota has set aside a 27 square mile area in which hunting is prohibited. This

area includes the territories of Terri, Mary, Gerry, and their radio-collared neighbors. The U.S. Forest Service has promised to match outside contributions up to \$31,000 to develop concepts of landscape ecology using data from these bears. Biologists from around the world (15 countries last year) are continuing to visit the project to learn the labor intensive, low cost methods that can be used to study threatened or endangered bear populations in poor countries.

People interested in helping this research have several options:

\*Contribute to a special black bear fund set up by the Great Bear Foundation to be matched by the U.S. Forest Service.

\*Sign up as an Earthwatch volunteer to work with the bears for 12 days between May 21 and September 28. See advertisements in Earthwatch magazine.

\*Attend a black bear weekend in September (to visit the bears in the forest) or next March (check mothers and cubs in dens). Please inquire for details. Call Bob Hunger at 218-323-7676 or write him at National Forest Lodge, 3226 Highway 1, Isabella, Minnesota 55607. Cost of \$217 (cabin) or \$237 (condo) includes meals, lodging, local transportation (canoes or dog sleds, depending upon season), airplane tour, etc. Any proceeds go to the black bear fund of the Great Bear Foundation.

More tales of the three bears and what they are revealing will follow in the next BEAR NEWS.

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