To Feed or Not to Feed - UPDATE October 1, 2021

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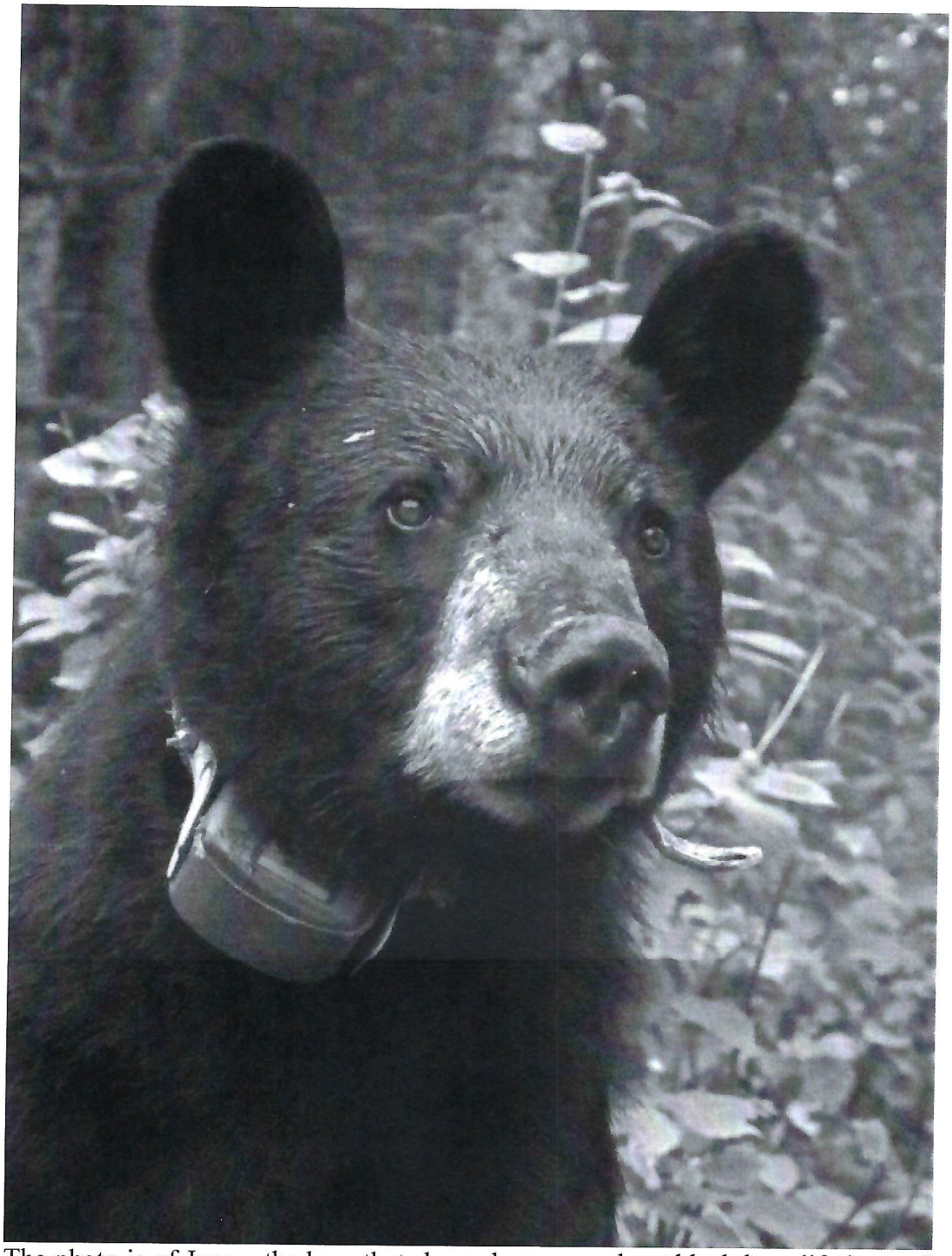

The photo is of June—the bear that showed us more about black bear life in good times and not so good times than did any other bear. I wish she were still here to walk with and learn how bears live in times of extremely scarce natural food these past two years.

In this time of debate about feeding, I'm reminded of the many misconceptions about this topic.

Wildlife Research Institute

To Feed or Not to Feed
Consequences of feeding black bears?

Feeding bears is one of the least studied aspects of bear biology. As a result, many of the beliefs about it have little or no scientific foundation. Here is a list of statements *(in italics)* that were handed out to residents of Eagles Nest Community as gospel by a wildlife official in September 2007. Some of the statements may be true from time to time, but none typify black bear behavior. The bulleted information is from actual research—either cited from other sources or from our own research. However, a caveat is that the last two years (2020 and 2021) have produced such extreme drought and scarce berries and hazelnuts that we are seeing more bears that ever in our studies. Some ore familiar bears taking advantage of diversionary feeding sites that keep them out of trouble in times of food scarcity. These include some of the oldest bears in Minnesota. But this year we are also seeing bears we never saw before as bears are driven out of large areas by fire and smoke. Some of these are coughing up blood and thick flehm that we believe is from smoke inhalation. Feeding these bears has allowed us to see them recover. Some of the bears are skinny from the lack of food. Skinny mothers that appeared here did not appear to be producing much milk and had unusually small cubs. Feeding them allowed us to see the mother produce more milk and the cubs grow into healthy youngsters. The drought and scarce food situation extends far up into Canada. Bears that face scarce food travel much farther than usual, and some of them are likely the skittish newcomers that we are seeing here in this time when Minnesota's own population is at a recent low. The latest DNR estimate is only 10,000 to 12,000 in the state compared to 20,000 to 25,000 a couple decades ago. At the same time more bears are coming out of the woods due to hunger, making bear numbers appear to be high. In this time of hunger, hungry bears are traveling from one diversionary feeding site to another and mostly staying out of trouble as they pass through people's yards. Numbers have waned now as bears have gained weight and slowed down as they approach hibernation.

Here are some common beliefs and what we and others have found.

1. A fed bear is a dead bear.

• This slogan was developed by campground managers to promote clean camping. A fed bear often does end up a dead bear in campground situations, but people blindly recite this rhyme as a mantra for all situations, not realizing it has no science behind it.

2. When bears congregate around feeding stations they spread communicable diseases to each other.

• Birds (Altizer et al 2004) and deer (Dobson and Foufopoulos 2001), can spread disease when congregating at feeders, but we know of no disease spread among bears in this way. We are currently conducting a study to determine whether a higher incidence of intestinal parasites occurs among bears that congregate around feeding areas.

3. Supplemental feeding is not necessary for bears. They survive well on natural foods.

• In good food years, black bears **do** survive well on natural foods, but in poor food years, cubs and yearlings may starve to death.

• In poor food years, hunger may drive bears to human food sources, and some of those bears are killed by landowners. Often, the bears are only gut-shot, resulting in slow, inhumane, and wasteful deaths.

• An increasing body of data from across North America suggests that diversionary feeding can help prevent problems around some rural communities. Where there is diversionary food for hungry bears to turn to, efforts to reduce nuisance problems by reducing attractants and using aversive conditioning are more effective and house break-ins are rare, resulting in fewer bears killed.

4. Bears prefer human foods over natural foods

• What bears eat depends upon what the alternatives are. If the only natural alternatives are low quality foods, bears may temporarily prefer human foods. However, when high quality natural foods like emerging vegetation, colonial insects, nuts, and berries become abundant, bears demonstrate their preference for those foods and spend little or no time seeking human foods.

• In the State of Washington, where foresters provide diversionary food to reduce tree damage, Ziegltrum (2004) stated, "If given a choice among sapwood, pellets, and berries, bears prefer berries. In July [when berries ripen], bears quickly wean off the man-made feed."

• Until recently, hunters in Virginia fed bears year-round. One hundred twenty-eight hunters surveyed provided 6,473,267 pounds of feed in a year (Gray et al. 2004). The Virginia Bear Hunters Association maintained that this supplemental feeding did not cause bears to cease their natural feeding and that bears will not use feeding sites, or will greatly reduce their rate of use, when acorns begin dropping from trees in late summer and early fall (Gray et al. 2004).

• In Minnesota, bears are killed over bait in higher numbers in years when natural foods are scarce (Garshelis and Noyce 2007).

• In Minnesota garbage dumps, most bear droppings during the summer berry season are natural food. Only after natural foods wane do most droppings contain garbage (Rogers 1989)

5. Bears may prefer natural food, but foods that people feed are more concentrated and easier to obtain – making for lazy, dependent bears.

• Researchers in northeastern Minnesota who walk with wild bears that have access to supplemental food find that black bears prefer high quality natural foods and forgo supplemental food to forage for natural foods when those foods are available. They say, "Anyone who thinks a fed bear is lazy should try following one around for a day as the bear travels far and works hard for wild foods. Variety is important in bear diets."

6. Feeding is simply for human entertainment, not for the health of the bears.

• In many cases feeding bears is simply for human entertainment, as is feeding of deer, birds, or any other wildlife. People enjoy watching wildlife.

• Feeding in some areas is turning out to be important in reducing nuisance problems—whether it is done for entertainment or to divert bears from problem areas in times of natural food shortage.

• Feeding bears enables people to learn about bears and get past the ferocious images most people carry in their minds. This leads to better coexistence.

• Wildlife Research Institute feeds bears for research, keeping records of bear visits, weights, social interactions, and activities. The bears are also radio-tracked to learn what they do away from the feeding station. The study is revealing some of the information written here. Feeding also enables researchers to establish the trust needed to place radio-collars on bears without drugs, adjust collars for growth, and walk with bears to learn aspects of bear biology that could not be learned in any other way.

7. Bears get unnaturally fat when feeding on human foods.

• What is 'unnaturally fat' for a bear? Bears are not like people and dogs. Bears are built to gain and lose huge amounts of weight over the course of a year so they can hibernate overwinter and produce and nourish cubs for several months before emerging from the den. Fat bears maintain favorable HDL/LDL ratios.

• Ely researchers are not aware of any data that show harmful effects from supplementary human foods. WRI has obtained more weights on free-ranging wild black bears than any other bear study in the world. In northeastern Minnesota, adult bears with unlimited access to high-quality supplemental food do not show consistent weight gains until mating season ends and berries ripen.

• Out of 105 bears that have been observed at feeding stations during the 12 years to date, only two (both pregnant females) might be considered "obese." Both produced healthy cubs.

• In captivity, an obese female black bear set a longevity record of 34 years at Grandfather Mountain, North Carolina.

8. Even if the bear you're feeding does not damage your property, it may create nuisance problems and cause property damage at your neighbor's home.

• This may happen from time to time, but data from Alaska, Montana, Colorado, Wisconsin, British Columbia, Michigan, and Minnesota show that hungry, emaciated bears (not fed bears) are the ones most likely to be nuisances, damage property, break into houses, and cause problems in campgrounds.

• House break-ins are most common where natural food is scarce and there is no diversionary food.

• Supplementary feeding sites are just another source of food to bears—along with natural feeding areas—but the reliability of supplementary food can become important in years of scarce natural food.

• Property damage is always possible with bears, whether they are fed or not, but people who feed bears in Eagles Nest Township experience very little damage, and neighbors of people who feed bears see few or no bears in the course of a year.

9. Feeding Bears = Tame Bears. A tame bear's inherent wildness is compromised by feeding, making it unwary of people. This results in more unwanted human-bear encounters, which overall reduces the value, appreciation, and tolerance of bears by the general public.

• Many people believe it is wrong to feed birds, bears, or any wildlife. Perhaps that would be ideal. However, in many parts of the country people are moving into bear habitat and usurping valleys and shoreline areas where bears once fed. More needs to be learned about how people and bears can coexist.

• In Eagles Nest Township, where residents have fed bears for over 40 years, DNR records show fewer complaints over that period than elsewhere in the state.

• Although bears learn to trust people at feeding locations, most run when they encounter people in the woods where people are not expected.

• If "inherent wildness" means inherent fear of people, we are not sure there is such a thing. Wild bears are intelligent animals whose behavior depends more upon learning than instinct. Bears are seeing more and more people in their habitat and are adapting to it. Bear personalities vary greatly. Some adapt more readily than others. More and more, bears are learning that they can continue foraging and caring for cubs without wasting energy running from people. This is normal habituation. Does this ability to learn mean they are not wild?

• In Eagles Nest Township, the vast majority of bears cause no trouble—even when natural food is scarce and bears in other townships become nuisances. Only 2 out of 105 bears identified at feedings stations in the township since our research began in 1996 have been the source of complaints. By contrast, in a nearby community that did not provide diversionary food, 1 out of every 9 households killed a "nuisance" bear each year during an 8-year study (Rogers and Allen 1987). Whether it is better to feed bears or kill them when natural food is scarce is a matter of opinion.

• Where bears are fed, neighbors commonly come over, meet the bears, and overcome misconceptions. This increases the value, appreciation, and tolerance of bears by the general public and enables people to enjoy the woods without fear.

10. Too many bears concentrated in one area can create a multitude of problems including threat to humans, bodily injury, property damage, car kills, and vulnerability to illegal killing.

• This could happen if feeding were done to excess in the wrong place. However, the resident population of Eagles Nest Township is no larger than DNR estimates for surrounding areas—about 1 bear per 1½ square miles.

• *"Threat to humans, bodily injury"* It is well known that black bears pose little threat to humans. It is disturbing that wildlife agencies continue to portray bears as dangerous.

• *"Car kills"* Bears routinely cross roads and occasionally get killed whether or not they have access to supplemental food. In Eagles Nest Township, the core of the study area, 2 bears out of 105 seen in the township during 1996 to 2007 were killed by vehicles. Both were over a mile from any feeding station.

• *"Vulnerability to illegal killing."* Bears are illegally killed throughout their range. In the Eagles Nest Study Area, after four decades of feeding, most people are more knowledgeable and tolerant of bears than people elsewhere.

11. Bears concentrated at feeding areas fight with each other and kill cubs.

• Where bears concentrate around food sources of any kind, aggression can increase as bears integrate into a peaceful hierarchy. Some bears watch from treetops until they have an opportunity to feed without conflict. Chases occur, but injuries are rare. By far the vast majority of injuries to black bears occur during mating season when bears are scattered and seldom use feeding stations.

- Of 59 cubs born during 1996 to 2007, none were killed at feeding stations. One was killed by a bear elsewhere.

This photo is of Lily, June's daughter, who followed in June's footsteps. June is one of the bears that taught us about their daily life in the woods and about bear-human relations. Lily taught us more about life in dens than any bear had ever taught anyone as is summarized in this paper:
Lynn L. Rogers, Linda McColley, Janet Dalton, Jim Stroner, Douglas Hajicek, Adam Partin and Gordon M. Burghardt. Behavior in Free-Living American Black Bear Dens: Parturition, Maternal Care, and Cub Behavior. Animals 2020, 10, 1123; doi:10,3390/ani10071123.
Click on the highlighted title to see the entire paper. During her active seasons, Lily also taught us aspects of mother-cub relationships that had never been known. She made Lily Fans some of the most knowledgeable people in the world when it comes to life in dens and care of cubs. She and June both disproved many of the beliefs listed in this update.

12. Mother bears teach their cubs to be nuisances.

- Research has shown otherwise. Most mother bears with access to supplemental food spend the majority of their time foraging on natural foods away from feeding stations.

- Breck et al. (2008) stated "there was little indication that conflict behavior in black bears partitioned along related lineages. This indicates that the acquisition of human food conditioning behavior was a function of asocial learning and/or social learning independent of parents."

13. Bears that get food at a house will then generalize and go from house to house looking for food.

• Neighbors of feeding stations seldom see bears.

14. Feeding often lures bears to areas where hunting is not allowed. Wildlife agencies rely on regulated hunting to thin out populations to reduce potential bear-human conflicts.

• When hunters distribute literally tons of bait in the woods, most bears are drawn away from diversionary feeding stations until the hunters stop baiting a month or so later. Hunters' baits are a major source of supplemental food each year.

• In Virginia, a survey revealed that 128 bear hunters each distributed, on average, over 50,000 pounds of bear food/year (Gray et al. 2004).

• In Eagles Nest Township, MN, 4 collared bears and several non-collared bears with access to supplemental food were killed over bait between 2000 and 2007.

15. Bears accustomed to being fed by people will approach hunters and be killed.

• Habituation to humans seems to be location specific. Bears that are comfortable with people in their yards where they are used to seeing people generally avoid or run from people they encounter in the woods where they don't expect to see people.

• Habituated, food-conditioned bears are not more susceptible to hunters.

16. Black Bears have lived for eons in Northern Minnesota habitats without supplemental feeding. In fact, today's northern forests, with an interspersed diversity of types and ages, produce more natural bear foods than they did in the past."

• Today's forests likely **do** produce more natural bear foods than they did in the past, but scarce food years still occur.

• For many decades, bears ate at garbage dumps when natural foods were scarce. Since 1971, bear hunters have been putting tons of bear food in the Minnesota woods each year from mid-August until after mid-September.

• Bears survived for eons before people arrived with birdfeeders and garbage to lure hungry bears to be shot as nuisances.

• Bears and humans have competed for human food throughout history (Schorger 1946, 1949). WRI is studying ways to reduce the conflict.

17. Female bears that are supplementally-fed breed and produce cubs at a younger age and at shorter intervals; this artificially inflates their reproductive rate and hence the growth of the local population.

• Bears with access to supplemental food, including diversionary food, hunters' bait, garbage, and birdfeeders often **do** have a higher reproductive rate. Where access to these foods is widespread, as with hunters' bait, it could increase the overall population.

• However, where diversionary feeding was used in a portion of Eagles Nest Township, the local population did **not** increase. The population appeared to be limited by female territoriality, dispersal, and mortality. The number of territorial adult females (5-6) remained about the same—although the individuals changed over time—which each female occupying approximately 6 square miles. This territory size is consistent with that of females without access to supplemental food. The territoriality of resident females effectively limits the local bear population. Fersterer et al (2001) found that the home range sizes of bears with access to supplemental food in the state of Washington did not differ significantly from home ranges of bears in non-feeding areas.

• Of 21 females that held territories or were born in the 36-square-mile study area in Eagles Nest Township during 1996-2006, 7 (including a yearling) were still in the township in 2007, 8 moved out of the township, 5 were shot by hunters, and 1 died as a cub. Most juvenile males left their mothers' territories and the study area at 1 or 2 years of age.

• Gray et al. (2004) stated that use of feeding sites in Virginia may be compensatory rather than additive and may only affect reproduction when acorns and other natural foods are scarce.

18. Supplemental feeding disrupts the normal social system of bears.

• Nothing in any study we know of supports that claim. Where it has been studied, females establish and defend territories normally, mothers care for cubs normally, families break up normally, bears court and mate normally, males disperse normally, bears make forays outside their usually areas normally, and bears forage on natural foods normally.

• Some of the forays are to diversionary feeding stations where social hierarchies reflect the social status of these bears within the overall study area. The same is seen at salmon streams or dense food patches across America.

19. Bear feeding often draws bears across busy roadways, increasing their chance of mortality as well as increasing the chance of dangerous car accidents for people.

• Highway deaths are a problem whether or not bears have access to diversionary food. Where bears do not have access to a few diversionary feeding stations, they are more likely to visit many bird feeders and garbage cans at houses along roads. In this study, 3 research bears were killed on Highway 169 and two others were hit and survived. Four of these were more than a mile from any diversionary feeding station. The fifth was seen being chased by a male during mating season minutes before it was killed.

20. Bears are adapted to natural food shortages. They have excellent memories and travel long distances to natural food sources. Supplemental feeding disrupts this.

• This statement wrongly assumes that bears prefer diversionary food over natural food and that bears become lazy and remain near feeding stations—a misconception that was covered above. When natural food is scarce, bears that remain near residential areas do spend more time at diversionary feeding stations than in other years, but these bears and other bears also make long trips to natural feeding sites.

• In a nearby study area, 40 percent of the females and 69 percent of the males made excursions outside their usual areas. Eagles Nest bears with access to supplemental food show a similar pattern. As examples,

1. In September 1999, a bear with access to diversionary food traveled 24 miles outside her usual range for reasons unknown.
2. On Sept 17, 2005, a female, and cubs with access to diversionary food traveled 15 miles north to feed on acorns in the Boundary Waters Canoe Area Wilderness.
3. On August 13, 2007, a 2-year-old female with access to supplemental food left her territory east of Soudan and moved 4 miles outside her territory to a remote area for 19 days.
4. Non-radio-collared bears are absent from diversionary feeding sites for up to 10 months at a time, depending upon natural food supply.

21. Bears feeding on natural foods rarely die of starvation, either in summer or winter. Supplemental feeding does not improve their chances of survival.

• Starvation is uncommon among **adult** bears, but cubs and yearlings often starve in years of scarce natural food. In a nearby study, cub survival ranged from 59% to 88%, depending upon natural food supply (Rogers 1987). Adding diversionary food in the current study increased cub survival to 91% (Mansfield 2007). Survival of yearlings after emerging from dens depended upon food and bodyweight (Rogers 1987). Only 40% survived as yearlings if they weighed less than 22 pounds upon emergence, 85% survived if they weighed 22-29 pounds, and all survived if they weighed over 29 pounds (Rogers 1987).

• The data clearly show that supplemental feeding improves survival. The data also show why hungry bears either become nuisances or go to diversionary feeding sites in years of scarce natural food. Some of them are literally starving to death. Also, pregnant females that don't get enough to eat are unable to maintain pregnancies.

22. Help us keep our bears wild, healthy, free-ranging, and a source of enjoyment for all!

• "Wild" The black bears of Eagles Nest Township are truly wild whether or not they are accustomed to seeing people. All intelligent animals learn not to waste energy running from creatures that pose no threat, and yet they remain wild.

• "Healthy" The bears of Eagles Nest Township are very healthy. They eat mainly wild foods and use human foods as a supplement. They are above average in growth and reproductive success.

• "Free-ranging" The bears of Eagles Nest Township are indeed free-ranging. They show the same travel patterns that bears showed in a nearby study area where bears were not fed. Bears travel for many purposes, including mating, maintaining territories, and finding a variety of foods.

• "Source of enjoyment for all" Bears that are fed are a source of enjoyment and education for many. If the diversionary feeding were stopped, homeowners who feed deer and birds would likely have more bear visits, which may not be a source of enjoyment for them.

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Thank you for all you do.
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