

A Champion for

BLACK BEAR



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Rehabilitation and research
offer insights into
bear behavior | by
Benjamin
Kilham

Black bear cubs weigh less than a pound when they are born in the dead of winter. Their eyes are shut, bodies hairless, and ears folded. They continue to develop, nestled in their mother's fur, unable to walk or climb, until they emerge from their winter den in early to mid-April.

Once out and active, the mother's first priority is to build a nest at the base of a good climbing tree, where she coaches her cubs at their first attempts to climb. The ability to climb is an instinct, but the cubs have to learn how to deal with rough bark, smooth bark, and slender tree limbs. She will spend three to four weeks at this site, until the cubs learn to follow and climb.

By mid-May, with the emergence of deciduous leaf cover that provides increased security, the sow and five-month-old cubs will move to better feeding grounds. The sow selects a large pine or hemlock tree near water. I call these "baby-sitting trees." She radiates out from the base of the tree to forage for green vegetation and acorns or beechnuts left over from the previous fall.

As the cubs' ability to travel improves, female bears with their cubs-of-the-year are on the move. Last spring, I got a call from Nancy Comeau, a Bear Technician with USDA Wildlife Services, about a sow that was struck and killed by a car in North Woodstock. The sow had managed to climb a steep bank and lead her three young cubs to the safety of a large white pine, where she died of her injuries. She was not found for a couple of days, and by the time Comeau arrived, only one cub was still in the tree. That cub was trapped and brought to our black bear rehabilitation facility in Lyme, N.H. Over the next week, Comeau and fellow bear technician Jake DeBow were able to track down and trap the other two cubs. As each of the cubs arrived, there was instant recognition and reunion with its siblings.



A Home for Cubs

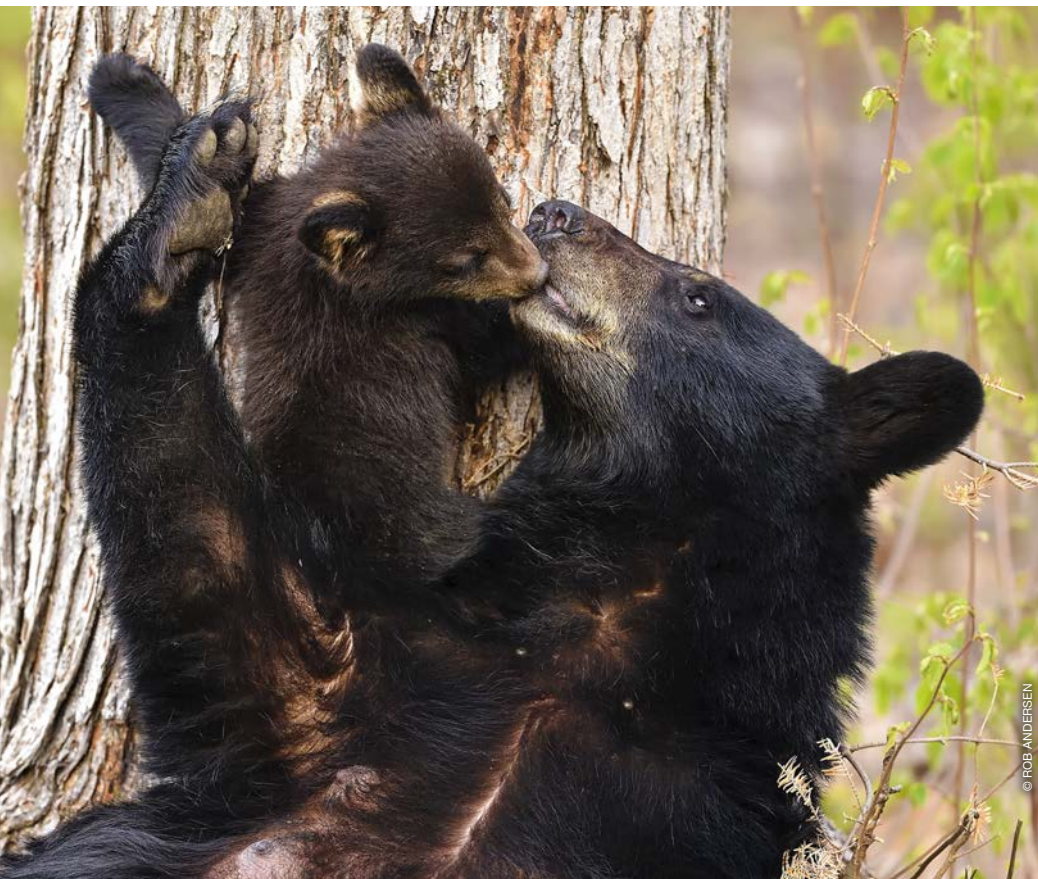
I run the bear rehabilitation facility with my wife Debbie and my sister Phoebe Kilham, who is the principal caregiver for the orphan cubs. When the cubs arrive, they are initially placed in one of two 10x10-foot indoor pens. The short-term holding of these new arrivals in smaller pens allows for their condition to be assessed and provides an opportunity for individual care if needed. Additionally, these interim holding pens provide the cubs time to adjust to the facility and their new surroundings. The pens are attached by tunnels to a large roofed area that abuts an eight-acre forested enclosure

Left: The majority of the orphan cubs that Ben receives come in from mid-May to July 1 at between five and six months old.

Below left: The sow is a loving and protective mother until the cubs reach about 18 months of age, at which time she chases them away.

Below center: Climbing lessons underway! Learning to climb trees is key to bear survival.

Below right: Ben Kilham rehabilitates up to 30 cubs each year – a staggering six-fold increase in numbers from just nine years ago.



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with several large white pines, a stand of oaks, a wetland, and two small ponds. There, the cubs can feed on many of their natural foods, from nodding sedge to acorns.

The earliest we have received cubs is the beginning of February, when they are four to seven weeks old. These are the most difficult cubs to raise. They are bottle-fed, dependent, and lack the experience that only a wild mother bear could give them. They occasionally become orphaned due to den disturbance (winter logging operations or excessive human activity around the den). This spring, Fish and Game Biologist Ted Walski brought us two cubs from Keene, where an excavator had dug into their den. While sows will tolerate minor and intermittent disturbance, more major events can cause the sow to evacuate the den and not return, which results in orphaning. This is more frequent with first-time mothers.

We receive the majority of our orphan cubs between mid-May and July 1. This represents a period when female bears are traveling, but the abundance of quality natural foods is particularly lean. At this point in the season, the sow's winter fat reserves are mostly diminished, leftover fall mast is gone, and spring vegetation has become less palatable and nutritious. Berries won't be available until the first week of July.

Sows with yearling cubs seek out high-quality food with even greater urgency, as they know family breakup is imminent. Bear cubs stay with their mothers for 17 to 18 months. It is the sow's job to give her cubs the best start in life possible before she chases them away. Family breakup is abrupt. The sow goes from a tender loving mother nursing her cubs to chasing them repeatedly up trees. Her behavior changes, and her drive to find food diminishes.

Our largest single source of orphan cubs is unprotected chicken coops, where female bears in search of high-quality foods to produce milk for their cubs may meet their demise facing a homeowner with a gun. Prior to 2008, we rehabilitated four to five cubs a year; now, with an increase in backyard chickens throughout the state, we rehabilitate 20 to 30 cubs a year. This is unfortunate, since chickens can easily be protected with electric fences. Wildlife Services Bear Technicians work closely with Fish and Game Bear Project Leader Andrew Timmins to respond rapidly to bear/human conflict complaints. They provide technical assistance to homeowners, including loaning electric fences, in an effort to teach people how to live with bears.

Cubs belong in the wild, as female bears can do a better job raising offspring at a much lower cost than we can. The cost to

rehabilitate each cub is between two and three thousand dollars, all of which has to be raised through donations.

Social Hierarchy

My interest over the last 25 years has been to study and understand the social behavior of black bears and to educate the public about my findings. When I started studying black bears, they were considered solitary animals. Their only contact with their own kind was thought to be their cubs and mates, although scientists knew they congregated at concentrated food sources.

I have found that black bears are very social. The females are "reciprocal altruists," meaning they act in a manner that temporarily reduces their own fitness for the benefit of another's. This comes with the expectation that the other female will do the same at a subsequent point in time. Similarly, "mutualistic" males routinely cooperate, communicate, and share food sources with unrelated individuals. This is the reason they become friendly so easily when humans, intentionally or inadvertently, feed them high-calorie food. Bears routinely make friends with other bears and maintain social hierarchies.

Female bears expand their territories and use their daughters to maintain an expanded home range. "Squirry" is a female cub who

Protect Poultry: GO ELECTRIC

Teaching a bear what an electric fence is all about can be accomplished by "baiting the fence." Place something aromatic on the wires, such as fresh bacon grease or tinfoil covered in jam, and bears will

get zapped on their nose or tongue, leaving them with little interest in what is behind the fence! This is an effective way to teach bears to honor electricity, which in the end will keep the bear from being killed due to conflict.



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weighed three pounds and was seven weeks old when she came to us as an orphan. She is now nearly 22 years old and will give birth to her 11th litter of cubs this winter. She shares a greater home range with a number of adult daughters and granddaughters in what is known as a matrilineal hierarchy. Squirty, being the matriarch, will chase all of her female relatives below her in order to maintain dominance and have access to

the highest quality resources (e.g., food, mates). The number two female will chase all those below her in the hierarchy; the number three, all those below her; and so on. The result is that in poor food years, the higher-ranking bears will have access to the highest-quality foods in the greater home range, ensuring that at least one female will be able to reproduce.

These greater home ranges give sub-adult

females a place to live until a suitable home opens up, but result in a delay in when they first reproduce. A sow with access to high-quality food will give birth for the first time at age three; those that are pushed may not give birth to their first cubs until they are four to seven years old.

Tracking Bears

I have worked with N.H. Fish and Game for the last 15 years on a cooperative project that requires that we maintain a population of approximately ten wild female bears that are radio-marked and fitted with GPS tracking devices. I trap bears and supply the collars, and biologists Andrew Timmins and Will Staats help with winter den monitoring. Fish and Game collects data on litter size and interval, survival, cause of mortality, animal condition, habitat use, and movement. The reproductive and survival data collected during this effort are used to validate the population models that the Department uses to estimate bear abundance.

I look at what we can learn about bear behavior. The data collected by the tracking collars provide insight on home range size, degree of home range overlap between related and non-related bears, denning sites and planning related to den selection, mental mapping, home range fidelity, and movement related to food acquisition.

The data collected during this collaborative effort inform ongoing science-based bear management in New Hampshire, which aims to maintain socially desirable bear densities, minimize bear/human conflicts, and, as people learn more about living with bears, reduce the number of orphan bear cubs that need our care.



Clockwise from top right: A black bear is fitted with a GPS tracking collar that will provide valuable data. While it is not illegal to shoot collared bears, Fish and Game asks hunters to refrain from harvesting these animals due to their long-term research value.

The research conducted by Ben Kilham helps in the effort to reduce bear/human conflicts.

Fish and Game biologist Will Staats poses with a tagged bear cub while conducting winter den monitoring of a bear hibernation site.



BEAR TALK

Bears have no trouble reading us, but we have a hard time understanding them. Like humans, bears communicate and cooperate with strangers. They can deceive, bluff, or manipulate. Ben Kilham shares his insights on what it means when a bear false-charges and more, in the expanded online version of this article at wildnh.com.

Black Bear Rehabilitator Ben Kilham is the author of two books: Among the



Bears and Out on a Limb and its paperback version, In the Company of Bears. He gives public lectures throughout New England.