

Surplus Killing by Mammalian Predators

By Gerry Lavigne

In a recent issue of Trapper's Post, editor and publisher, Bob Noonan, detailed various aspects of predation on barnyard poultry by common furbearers like red fox, raccoon, skunk, bobcat, coyote and weasels. In that series, Bob touched on the concept of surplus killing, and he opined that this type of predation was rare. I have to disagree. As a retired deer biologist, and a lifelong homesteader, I know that when the conditions are right, surplus killing can be common, and devastating.

Surplus killing differs from other predation events in that far more prey are killed than the predator(s) can possibly consume before the carcasses spoil. It occurs when the predator has an overwhelming advantage over the prey, and the predator seemingly doesn't know how or when to stop the killing spree. Surplus killing has been documented in most predators, from the diminutive weasel to the gray wolf. The following examples from my own experience will illustrate the concept.

I raise ducks, broilers, turkeys, and geese for meat. We also keep a flock of laying hens. Several years ago, I had a dozen or so young ducklings penned in a poultry barn adjacent to my flock of layers. One morning, I discovered some critter had gotten in and killed every single duckling. Each one had numerous bites, but none were consumed. I suspected weasel or mink. The next night, the bandit struck again, this time killing some of my laying hens. These adult birds were mauled about the head and neck; their bright red combs eaten. At this point, my weasel theory was suspect. On the third night, I heard a ruckus in the hen house. With shotgun in hand, I rushed in to discover a big dog coon mauling some more hens. He became supper instead.

More recently, I had a batch of forty half-grown broilers penned inside a large barn. It was mid-September, and I was looking forward to putting some prime chicken meat in the freezer within a few weeks. One morning near sun-up, as I went up to the barn, I saw a dead broiler in the grass near the barn. A few steps closer, I saw another and another and another bird - seventeen in all, scattered over a 200 foot swath in my pasture. None had been eaten. A quick check of the broiler pen revealed only 10 birds remained, and none of these had a mark on them. Somewhere, the predator had cached 13 other 3 ½ lb. broilers elsewhere. When I walked the 60 yards from the barn to my pond, I came upon a very tired-looking red fox taking a drink. We saw each other at the same time, he with legs; me without my gun. He seemed to smirk and wink at me as he casually strode into the nearby woods! I had repeatedly seen this fox near the barn. Though I kept a radio on in the barn, the barn had large open doors, and the broiler pen had only a 3 ft. barrier to keep the plump broilers on the right side. This fox gradually overcame his fear of man, and had himself a killing spree that night. He evidently entered the pen where the broilers lived in tight quarters. He grabbed one bird at a time, left the pen, killing the bird as he went. After the first 13 birds were killed and cached, he continued with the next 17. Tired, but not spent, the fox began dropping each of the 17 in the field as soon as it stopped struggling. Had daylight not interrupted him, I believe that chicken thief would have killed all 40. That fox and I met again the following February: he lost. Never bring a set of legs to a gunfight.

I used to free-range geese. No more. One year, my adult pair had raised a fine brood of 5 goslings, one of which was destined for our traditional Christmas dinner, or so I hoped. One fine autumn Sunday, my family left the farm for a day at the hockey rink. We returned in daylight to find 6 of our geese lying in the tall grass dead or dying. Only the gander survived unscathed, and he was some riled up. So was I. The geese were each attacked by a bite to the back and a violent shake, which tore a gaping hole out of the back. The culprit was a neighbor's German shepherd, which had been allowed to run at large. When herded into tall grass, the geese bogged down, and became easy pickings for this young, undisciplined canine.

During my thirty years as Maine's white-tailed deer biologist, I encountered several instances of surplus killing of deer. In February 1982, we were called out to a local deeryard to investigate some carnage. In one night, two German shepherd crosses maimed and killed 18 healthy deer in one night. The dogs were tracked to a nearby home, where the owner was desperately trying to clean the blood off his dogs. Dogs do not kill deer cleanly, and these deer were a mess. They suffered needlessly. The dogs had the advantage of robust good conditioning, and the deer were bottled in a small deeryard, confined by chest-deep snow and a non-supporting crust.

During another severe winter (1987), I discovered another case of surplus killing of deer, this time by eastern coyotes. It was early March, and again, deer were restricted by chest-deep crusty snow. Working in a deeryard that bordered I-95, I discovered 3 fresh deer carcasses piled up near the page wire fence that borders the highway. Blood and hair were all over the scene, as were the sign of 3 or 4 coyotes. The deer carcasses showed the classic indications of coyote predation: disabling wounds to the legs and flanks; lethal wounds to the neck and throat. Interestingly, the coyotes ran the deer into the fence, which prevented the hapless deer from escaping. Bugged down off-trail and in deep snow, the deer didn't stand a chance.

During the late 1990s, I became aware of one of the most extreme cases of surplus killing of wintering deer by coyotes. This time, glare ice tipped the scales in favor of the predator. It happened in February, on the St. Croix River, which forms the boundary between Maine and New Brunswick, Canada. Sometime during that winter, the frozen river rose in response to heavy rain. When the water receded, an icy shelf appeared on the shore, with glare river ice still covering the river 2 to 3 feet below the high-water mark. At one point, coyotes apparently drove nearly 40 deer onto the glare ice. The deer couldn't negotiate the glare ice, nor could they regain the shore, because of the ice shelf. As I recall, some 38 deer perished during that one event. Needless to say, local hunters were understandably miffed at the coyotes and the lack of an effective predation management program in Maine!

So, how does surplus killing of prey occur? More to the point, why is it the exception, rather than the norm? First of all, the act of predation is really a sequence of separate, though related behaviors. Hunger drives the predator to search, or hunt for prey. Encountering prey initiates the chase. A successful chase results in a kill and a meal. When the prey is fully consumed, hunger eventually drives a repeat of this sequence. Normally, it's hard work for any predator to find, chase, and kill prey. Typically, the predator is exhausted by the time a kill is finally made - they're simply too pooped to pop another prey.

Surplus killing occurs when multiple prey are so easy to kill, that exhaustion does not occur until several prey have been dispatched. It seems that the chase and kill sequences are involuntary behaviors that drive predators to kill over and over again, like a tape recorder loop that keeps playing until the tape breaks (physical exhaustion).

We would like to believe that surplus killing by mammalian predators is rare and uncommon. Over most of the white-tail's range, that's probably true. But here in the north, events that favor surplus killing (deep crusted snow, long winters) occur more frequently. Excessive rates of predation probably have a lot to do with defining the northern limits of deer range. And the phenomenon certainly complicates our ability to sustain huntable populations of deer over time.

As for livestock and poultry, the frequency of surplus killing events may depend, in part, on man's ability and willingness to implement management practices that prevent surplus killing. As indicated by my own experiences, we cannot foresee and prevent every possible surplus killing event. Little wonder farmers and ranchers tolerate the presence of predators at all!

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