



## MASSACHUSETTS W/ILDLIFE

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## **FEATURES**

## **GHOST OF THE WINTER DUNES**

— Mark Wilson

A small, grayish sparrow collected on a beach in Ipswich in 1868 would prove to be a scientific enigma, but today most ornithologists agree that the Ipswich sparrow is a race of the Savannah sparrow...



— Peter G. Mirick

The bobcat is among the most elusive and difficult-toobserve predators in Massachusetts. If you could follow one for a year, the life path it would lead you on might go something like this...

## WINTER ADVENTURE ON THE PARKER RIVER NATIONAL WILDLIFE REFUGE

— Artie Jackson

There are few winter destinations offering as many birding and wildlife viewing opportunities as Plum Island. Pick a windless day for comfort, go beyond the beaten path, and you may be rewarded with the sight of a magnificent snowy owl...

Director's Editorial

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On the Cover: In the fading light after sunset an adult female bobcat (Lynx rufus) pauses for a moment to scan the ledge below for prey and possible threats. She likely continued to follow this familiar contour within her home range for hours that evening, and probably covered 2-4 miles before she settled into another den or terrestrial lay later in the night. At least one of her 9 month old kittens still remained in the area when this shot was taken in early spring. The cat was photographed with a Nikon 400 mm lens on tripod, 1/200 sec., f:5.6, FX, @ ISO 5000.

Photo © Bill Byrne

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The bobcat (*Lynx rufus*) is one of our most beautiful and secretive native predators, the only indigenous, wild cat presently breeding in Massachusetts. While most encounters are a brief glimpse of the animal crossing a road, sightings in backyards and neighborhoods, as well as under deer hunting stands, appear to have increased substantially in recent years, indicating not only that our bobcat population is growing in both numbers and range, but also that this animal, once believed to be a "wilderness" species that couldn't tolerate human encroachment, is adapting to suburban habitats. What follows is a fictional account, based on published research and the observations of wildlife trackers, of how a Bay State bobcat in a semi-rural area might live.

It was an hour or so before dark when the cat lifted her head from the warm curl of her belly, licked her nose once with her raspy pink tongue, and stared out into the dimming twilight. She had eaten well that morning, having consumed a gray squirrel that had been paying more attention to finding acorns under the snow than potential dangers lurking along the edge of the woods. Each time the squirrel had burrowed its head into the snow, sniffing for nuts it had shoved into the duff the previous fall, the cat had crept a little closer and stopped again, flattening herself behind whatever cover was available. Her careful stalk eventually shortened the distance between the animals to less than 20 feet, and when the rodent again stuck his nose to the earth, she had sprung, reaching him in two bounds and snapping his skull in her jaws before he could know what had befallen him.

But now the mid-winter cold was seeping back into her, already starting to awaken her hunger again. She rose to her feet and arched her back, then extended her front legs to stretch her lithe body in the little den amongst the boulders where she often slept. She yawned luxuriously, displaying the four sharp canines that were her main means of dispatching prey. A few months shy of

5 years old, still in her prime, she crept cautiously out of her little den and jumped to a convenient vantage point atop the rocks to take a look around. She neither saw nor smelled anything amiss, heard no possible prey or potential enemies, and so she jumped down and padded away through the light dusting of snow without a look back.

The zigzag route she followed was very familiar. It loosely conformed to the borders of her home range, but there were assorted side loops and deviations she might or might not investigate depending on the season and availability of prey. While her range encompassed approximately 4 square miles, less than half the size of a typical male's, the entire route that she covered at least once or twice a week was over 9 miles long. It was her habit to cover 2-3 miles on any given day, moving for a few hours around each dawn and dusk, then sleeping in a suitable den or lay for several hours. But if she caught or found a substantial meal (such as a car-struck deer that had staggered into the woods and died) she might remain more or less stationary for two or three days as she repeatedly fed on the carcass.

Her coat was relatively short, but dense, and most people who compared its feel with the textures of furs from the dozen or so other Bay State furbearers would judge it the softest, if not necessarily the warmest, most beautiful, or colorful of the bunch. At this time of year her fur was at its longest and densest, protecting her from the abrasions of ice and snow and insulating her from the cold. It was a pale grayish brown along the back and sides, much lighter in shade than her reddish-brown summer coat, and liberally sprinkled with small dark spots and smoky, indistinct bars that broke her outline and provided surprisingly effective camouflage. Her underparts and the insides of her upper legs were whitish and spotted, while her eyelids, the underside of her 6-inch tail, and a patch on the back of each ear were grayish white. Her short

There are considerable differences between the bobcat's winter and summer coats. This cat, caught walking on a log (classic behavior for the species) in the spring, is shedding its lighter-colored, longer winter coat to reveal a darker, shorter, more reddish and more heavily spotted summer coat.





Regardless of the season, the bobcat's coat, as on this Berkshire cat, provides it with surprisingly effective, smoky camouflage that helps allow this shy and elusive predator to approach prey undetected and avoid discovery by potential enemies.

"bobbed" tail (from which the species derives its common name) was barred with black on the top, the last bar being broad and giving the tail a black tip when viewed from above or the side.

She had lived within and defended her territory from other female bobcats for the better part of the last four years, having discovered and settled into it a few months after she had left her mother to begin life as an adult. It had expanded a little in size during previous summers when she had kittens to support and train, but had shrunk again each winter when her grown, surviving young had set off for life on their own. Now, with only herself to feed and plenty of prey available in the form of rabbits, squirrels, and ground rodents, she didn't need to expend the energy to mark and defend a larger area.

She was naturally secretive, a habit that helped protect her from the attentions of avaricious coyotes and human hunters. People and coyotes were the only animals she feared, but the latter did not attack her except to try to steal her kills. The wild canids did not consider her a potential meal because she would have cost them too much in energy and injury to overcome, if they could, indeed, even manage to overcome such a fierce, powerful, and well-armed fellow predator. Plus, she was a master of escape and could easily ascend into the tree canopy.

Although she had hunted successfully among the birdfeeder-equipped houses in a small subdivision encompassed by part of her territory, she felt insecure there, and typically moved around its edges, rather than into the midst of houses. Yet (although she was quite unaware of the fact) a daughter she had raised two years ago had established her own territory in a highly developed area nearly 30 miles to the East, and had largely maintained the secrecy of her existence despite the abundance of humanity and dogs, plus a near-reliance, at least in winter and

Once thought to be a "wilderness" animal that could not tolerate human encroachment, bobcats are in fact adapting just fine to suburban habitats, where they find ample supplies of human-subsidized rodents and birds.

early spring, on the prey-concentrating attributes of well-stocked birdfeeders. These bait stations provided her with a steady supply of careless squirrels, chipmunks, mice, and even a mid-sized bird now and then, most of which were taken in the hour of dawn when there were few human eyes open to witness her hunting skills in action.

The offspring of this daughter, born in a little patch of steep, rocky woodland between two residential streets, would likely be even more tolerant of humans and more reliant on artificial prey attractants than their mother. The species, which ranged over much of North America and thrived in mountain, forest, swamp, and even desert habitats, was simply adapting to changing habitat conditions. In New England, as elsewhere, bobcats had found that the pattern of human development produced the scattered patches of forest, field, edge, and abundant food resources that suited them just fine.

It is the natural proclivity of bobcats to be solitary, secretive, and shy. They seem to prefer only their own company with two notable exceptions: when members of the opposite sex are attracted to each other briefly during the mating season and may actually spend a day or two in each other's company; and when mothers dote on their kittens and train them for months until they are capable of independent survival.

The incessant marking of borders and regular checking of scent posts for olfactory sign of other bobcats allows the individuals sharing territorial borders to communicate without personal contact: Like texting teenagers, they keep tabs

A bobcat scratches the underside of a log to leave scent in a place protected from the weather. The area beneath the log may well be used as a lay where the cat loafs or watches for prey to appear.



Abundant prey (a vole in this case) and adequate habitat have allowed bobcats to adapt to suburban neighborhoods.

on each other without acknowledging the presence of one another. This allows them to avoid most physical disputes. When presence is acknowledged, it is generally for reproduction or territorial battle (and even then, usually through threat displays rather than physical contact) but there are occasional exceptions, such as when mothers encounter grown daughters whose territories happen to border their own. In such cases (not uncommon, since maturing female offspring, unlike males, tend to establish their territories close to their mothers') the cats typically relate to one another in peaceful recognition, if not with much of anything that could be construed as genuine affection.

While females regularly marked the borders of their territories, males were even more obsessed with the task. In





Male bobcats will vigorously claw small trees in the vicinity of their territorial borders to provide visible scent posts.

addition to defecating and spraying urine at set border locations (typically on small stumps, rock faces, and the undersides of leaning trees) they also clawed tree trunks to leave both visual and olfactory scent posts. They had to guard against frequent incursions by bordering males, maintain knowledge of the whereabouts and receptiveness of the females that lived within the borders of their territories (and sometimes beyond) and, of course, find and kill enough prey to sustain their larger bodies and supply their energy needs.

But they had to test one another, as males of many species often will, and if a receptive female could be intercepted on a neighboring male's territory, the risk of an altercation might well be ignored. When the males encountered each other they raised their fur, engaged in threatening posturing, and issued low, prolonged

A bobcat sprays pungent urine into the frozen laurel behind it to leave a scent marker that, among other things, informs other bobcats that the territory is occupied.



growls of such deep and intimidating pitch that they might have arisen from the chests of African lions. Physical battles were rare: A male on his own territory has a major psychological advantage and a rival will usually back down without a claw or tooth being called into play. But when physical battles did occur, typically instigated by the presence of a receptive female, they were loud, bloody affairs that often left both combatants with significant, sometimes fatal, wounds.



As the cat padded along at a leisurely walk she continually scanned ahead with eyes and ears. She immediately froze if she caught any movement such as a blowing leaf or a ground-scratching bird. She paused often. Unless she was making a turn, stopping to observe, or leaping up to an observation post, as she lifted each front foot the trailing rear foot was planted directly into the track left by the front foot. The result, in snow at least, was



The front foot track of a bobcat in snow is round, lacks claw marks, has asymetrical toes, and a 3-lobed heel pad. Canine tracks lack these features.

a trail that appeared composed almost entirely of identical tracks. This habit of "direct register" (or "perfect walking" as it is sometimes known), is also common to

Oozing indifference, an adult female bobcat walks past an adult male. The two likely share portions of their territories, but like texting teenagers, bobcats keep tabs on one another without acknowledging the presence of one another. This presumably allows them to avoid what would otherwise be regular physical disputes.





If a bobcat has the option to walk an elevated path, it will almost invariably do so.

the foxes and often the coyote. It is one of many track features that novice trackers quickly learn to recognize. It applied very well if she was walking, but if she picked up her pace, her tracks began to double register, with the back paws coming down ahead of the front tracks.

Her tracks were just a bit less than 2 inches wide—almost three quarters of an inch smaller than those of the big male whose territory overlapped her own, but half again as large as an average housecat's. The 4-toed tracks could be distinguished from those of a dog or coyote because they lacked claw marks, were round or slightly wider than long, and the toes of the front feet, like the fingers on a human hand, were slightly asymmetrical in length and angle. (There are other differences as well: See **Tracking and the Art of Seeing** by Paul Rezendes or various online sources.)

She tended to favor an elevated path as she walked, and if there was a fallen tree trunk, rocky ledge, or stonewall available, that was the path she took, almost as if she wanted to avoid getting her feet dirty. The habit was especially prominent in winter, when it appeared she didn't like to put her feet in snow if she could avoid it. She tended to favor the same elevated paths at this time, likely to be windswept of heavy snow, along with shorelines, exposed rock ledges, and the often-bare patches found beneath conifer stands. She even used roads occasionally to avoid deep snow, though only at night. This habit of walking where she would not leave tracks, seemingly whenever possible, was confounding to trackers, and made even more perplexing because, when she had to travel in deep snow, she often chose to walk precisely in the tracks of other animals, especially deer and coyote, whenever they were available.



Very young bobcats such as this 6-8 week old kitten, above, rarely leave heavy cover, but as they get older (like the 3-4 month old, right) they start to follow their mothers on hunts. Bobcat kittens spend a minimum of 4-6 months under the tutelage of their doting mothers who teach them, by example and through much practice, how to find and kill a variety of prey species. Note the pearly white patches on backs of ears—used as guiding beacons when following each other at night.

At almost 20 pounds and about a yard long, she was big for a female, but still less than half the weight of the 4-foot, husky male that shared part of her territory and had sired two of the three litters she had given birth to in as many years. Now, with the mid-to-late winter breeding season fast approaching, she was giving both her own and his scent posts more attention than usual. She lingered in the part of her territory they both shared. She marked her scent posts more frequently. His signs - obviously clawed birches and maples, plus sprays of great olfactory intensity – became plentiful. One night their paths converged, and then there was such caterwauling and screaming that even the local raccoons thought it best to remain in the security of their dens for the duration.

It was the kind and volume of sound (and maybe this was exactly its purpose) that no creature with intact self-preservation instincts would desire to investigate. On this night it turned the paths of a hunting fisher and two foxes, spooked a great horned owl who would later kill and eat one of the resulting kittens), and in a house more than





200 yards away, a woman awoke, listened, and poked her snoring husband in the side.

"Hank!" she whispered, "Wake up! I think it's one of them fisher cats!"

It was a testament to her adaptability that the bobcat had killed and eaten many kinds of prev during her life – mice, moles, shrews, squirrels, mink, skunks, muskrats, opossums, deer fawns, a half dozen species of birds, eggs, snakes, insects, even fish. But the animals she ate the most were cottontails and snowshoe hares. As a young adult, the female's success rate per rabbit/hare capture attempt had been less than one-in-ten, a measurement of her inexperience and the superbescape talents of lagomorphs. Now, however, her kill rate was close to one for every three or four attempts, partly because she had gotten that much better at pursuit and anticipating rabbit escape maneuvers, partly because she had learned not to attempt a chase unless the odds of success were in her favor.

She habitually used several lays and hunting beds at scattered locations around her territory. They were safe, open places to loaf, nap, or lie in wait, and not enclosed like her dens. Two were located on elevated rock ledges, one was under a dense spread of mountain laurel on the side promontory of a steep little hill, and another was 10 feet off the ground beneath the large, angled limb of a partially toppled white pine. She spent many motionless hours in these locations waiting for ambush opportunities, although she stood occasionally to stretch her muscles and adjust her viewing angles. Her lays all shared several features: They provided concealment from prey and enemies, protection from weather, and eminent views of game trails. Essentially, they were all comfortable, concealed perches from which she could silently ambush prey or instantly disappear into heavy cover.

On this morning, however, she was not in a lay. She spotted the snowshoe hare as she walked up behind a gap in a stone wall and crouched, scanning the little vista of laurel and oak her position afforded her.

It was cold and calm at that hour, cold enough that each breath she expelled was momentarily visible. Her whiskers, facial hair, and perhaps the small tufts of hair on the tips of her ears informed her that she was in a good hunting position, facing directly into a barely perceptible breeze, and, searching for any movement upwind, she saw the hare lope from the cover of a patch of laurel trunks to behind the upturned umbrella of roots at the base of a hemlock blow-down.

A younger cat might have waited for the hare to reappear on the other side, and so missed the opportunity, as she herself had done once or twice, but she was now an experienced adult, an expert hunter and killer, and she flashed across 30 yards and leapt onto the trunk of the fallen tree as silently as an owl, then peeked over and between the shield of roots. The hare, oblivious to her presence, yet always on alert, chewed on buttonbush sprouts, leaving the twig ends cut as neatly as if by a knife or hatchet. He quickly lowered his head to cut each twig near the ground, then immediately raised it to watch for danger while he chewed.

Her tail extended straight behind her, the cat worked her back toes and claws into the bark of the trunk in the classic preparatory manner of all felids about to launch, and sprang. Her momentum carried her just over the edge of the root shield, across the 10-foot shallow crater its upturning had left behind, and still yet another few feet to within an easy leap of the hare. As she made that second leap - as quick on the first as that of a fleeing leopard frog's - her left rear foot slipped slightly in the loose leaves and the hare began to react. Surprised, confused, and desperately frightened, he launched straight into the air, purely on reflex. She landed just a little short of her intended, still-ascending target, but her legs were long, her reactions swift, and she had the claws of her right paw into him before he could hit the ground, her left's before his frantic kicking could find escape purchase. She clasped him to her, bit him quickly behind the head as her rear claws simultaneously came up into his flank, and snuffed his death scream and frantic kivering before they could even begin.



It was good not to draw attention: Meat was valuable and the coyotes always had their ears on. And unlike those omnivorous canids, she was an obligate carnivore: She couldn't supplement her diet with berries and other fruits.

It was a big hare and she fed on it for two days. After initially licking most of the blood off the fur, she had carried the carcass, straining and stiff-legged to hold it clear of the ground, into the cover of a nearby hemlock grove. She almost always dragged her larger kills into hemlock or other conifer stands before she consumed them. She didn't like to be exposed to observation, plus, in winter, such habitats were a little warmer and had less snow on the ground than surrounding areas.

She licked the fur on the hare's belly with her abrasive tongue and soon bared a patch of skin. Using the fur-cleared area as a starting point, she opened the carcass with the scissor-like cutting teeth on the sides of her jaws. She removed the innards that would otherwise quickly spoil the meat, and either ate them, or, as she did with the colon and stomach in a habit that may have helped her avoid some parasitic infections, carried

them off and left them as mysterious, disembodied offerings in the leaf litter. (A murder of crows discovered and ate them the following morning.) Then she ate choice muscle, as much as she could comfortably hold, scraped needles, sticks, leaves, and hair from a circle around what remained of her kill to loosely cover it up, and ambled off a few dozen yards, sleepy and satiated, to curl up under the dense, ground-sweeping bough of a young hemlock.

When she awoke the following morning in the predawn, she walked a half mile to her nearest regular scent post, scraped out a shallow depression in the loose dirt at the intersection of two game trails, and defecated prodigiously. Her scat was 2-6 inches long, less than an inch in diameter, and segmented. An experienced tracker could have identified its maker by the fact that it was not twisted, had blunt rather than pointed ends, was packed with lots of hair from her last kill, and contained no seeds or substantial bone shards that were common in covote droppings. Sometimes, as in this case, it was deposited in a premade, shallow scrape, and it might or might not be casually covered with a scatter of dirt and dead leaves raked from an arc around it.



Bobcat kittens typically remain with their mother well into the fall, and sometimes right through their first winter, long after they have grown to full size. The burly cat at right is the mother of these two winter-coated youngsters.

Photo © Bill Byrne

Her evacuations completed, the cat retraced her steps and fed again, leaving at last a couple hours after sunrise. Even though her hunger was gone and her belly heavy, she moved on for another mile, stopping twice to mark her boundaries with urine, and once to observe a doe and her grown fawn as they pawed for the dwindling supply of acorns. Aside from the largest bones and teeth, some scattered patches of fur and skin, and the temporary security that filled her stomach, nothing remained of the hare.

The cat was so secretive, so adept at slinking away unheard and unobserved at the approach of people, that she had only been seen by two humans in her entire life. One was a little girl who had awakened at dawn one morning and stared wide-eyed out her bedroom window at the apparition of a large (by her standards) wildcat perched like a gargoyle on the stone deck that overlooked the backyard. The cat had turned its head and looked straight into her eyes before suddenly bounding across the yard and into the woods.

The other was a college biology professor who had spotted her at the side of a road on a summer afternoon, far enough ahead so he could come to a stop and observe. She ran across the road, halted in the short vegetation on the other side. and turned to look back. He was elated to see three kittens pop up on the side where the cat had been, but then, realizing what was about to unfold, became alarmed at the approach of a truck from the other direction. He flashed his lights to warn the other driver, but the truck barely slowed as the kittens made a dash for their mother. Wanting to avert his eyes from the imminent tragedy, the professor watched anyway, and was immensely relieved to see the last kitten leap safely past the approaching tires with less than an inch to spare.

When the little girl told her mother about the "big brown wildcat" in the backyard that morning, she was assured that it must have been a large housecat she had seen. Later, however, the worried mother had asked a friend if it was possible that there were mountain lions in their town, and was told, quite

erroneously, that there were, and that the friend knew several people who had seen one. "Oh my God," said the mother to her friend, "I think Katie saw one in our backyard this morning!"

The little girl grew up and always retained her memory of a big cat sitting on the stone rampart, looking back at her with those fascinating eyes, and when she was 23 years old and thumbing through a magazine at the dentist's office, she opened a page and beheld her childhood vision, and so at last knew her animal. As for the professor, he told his bobcat encounter story to his children, and later to his grandchildren, and such was its simple intensity that they were still telling his story to their children and grandchildren (perhaps with some embellishment) long after he was gone.

As winter gave way to spring, the bobcat grew rounder and her belly hung lower as her young developed. She killed and consumed more prey than was her habit. At the height of spring, a couple of months after mating, she gave birth to four kittens in the warm den of a hollow beech log that had fallen in the middle of a dense patch of mountain laurel. She had used it for the same purpose the previous year. The kittens, each about 10 inches long and less than a pound in weight, were revealed to be well furred and spotted as she, purring the while, licked them clean and ate their placentas. Their eyes would not open for another 10 days.

She remained in the den with her young for two days, nursing and cleaning them, but soon her hunger overcame her protective instincts and she began to go on hunting excursions for several hours at a time. The kittens mostly slept during her absences, but once their eyes opened they began to explore, at first the inside of their den, and then the area around the entrance where they were soon playing with each other and loafing on every sunny day and warm evening. If they heard any strange noise, however, or the shadow of a crow or raptor passed over them, they instantly vanished into the den.

Unlike the male, the mother bobcat had never killed an adult deer, although she had scavenged off of the male's deer kills on occasion. He was a master at taking deer in winter, mostly by stalking them in their beds, but on two occasions he had ambushed them from above, dropping once from a perch on a leaning tree, and once from a rock ledge. He killed them quickly with rapid, powerful bites to the spine and base of the skull, or, if circumstances prevented that angle of attack, crushed their throats and jugulars like a lion.

The male appeared to have no interest in his offspring, and the mother would have attacked him had he appeared in their vicinity, but some researchers have speculated that male bobcats will occasionally leave kills in the territories of females they have mated with, presumably to supplement the food supplies of their mates and young. Whether this was true or not did not matter to the female - she would find enough food in any case - but now, in the maturing spring, she scouted the fields and marsh edges of her valleys for newborn fawns. She hunted where she saw or scented does, and when she was lucky she found the wonderful little spotted things, curled up and helpless, and quickly bit into their brains and dragged them into thickets for privacy. They would have been a windfall at any time of year, but now, with the energy demands of lactation upon her, they were seasonal treasures that allowed her to spend more time with her young kittens, less time hunting.

The kittens were about a third the size of adults by the time summer arrived, and

SEASON	Total	Hunt	Trap
03/04	42	36	6
04/05	45	38	7
05/06	37	19	18
06/07	34	29	5
07/08	49	40	9
08/09	52	46	6
09/10	48	40	8
10/11	59	60	12
12/13	96	74	22
13/14	92	70	22

the mother began to take them with her on hunting excursions. They would not be entirely weaned for another month or so when they were about half as big as her, but they were already eating meat she regurgitated for them, and would soon begin to take their own prey. For now, however, their bumbly, incautious presence essentially eliminated her ability to take most "large" prey, as no rabbit or hare would be left unaware of their approach. Further, if they were out in daylight, the presence of five bobcats on the landscape was a spectacle that the crows and jays couldn't fail to miss, and their location was loudly and continuously reported to all within earshot.

It was during one of their first evening hunting forays that a great horned owl took the smallest of the kittens. They were following their mother in single file, each relying on the white beacons on the ears of the one in front to lead them onward and keep them together in the darkest sections of the forest's thickets. The little one had lagged behind, and the raptor had struck silently and swiftly, instantly killing the kitten as its powerful talons punctured heart, lungs, and liver.

The mother did not immediately realize her smallest was no longer with the rest. and in any case, given its instantly fatal wounds, no intervention on her part could have saved its life. She found the spot where the owl had killed it - the carcass was already being consumed in a nearby pine tree – and she called and searched for it for a little while. She did not linger for long, however. Most animals do not spare much time for mourning: They have to get right back to the dictatorial imperatives of survival (as did humans until we learned how to grow and store surplus food). Her surviving young were her priority.

They traveled slowly, mostly because the mother cat did the leading and she was meticulous in scouting out each new vista for danger and prey before allowing her often rambunctious charges

The hunter/trapper harvest of bobcats in Massachusetts has been trending upward for more than a decade as the population has grown in size and range.



Rodents and grasshoppers beware: A mother bobcat (foreground) takes her three nearly grown kittens through a field during a hunting foray. While the short tails are obvious on the two lead cats, the third cat demonstrates how easy it is – particularly if the sighting was momentary – to imagine it had the long tail of a mountain lion.

to expose themselves. She captured and wounded small prey items – voles, chipmunks, mice – then dropped them for her young to play with, kill, and eat. She had no concept of cruelty or mercy, and provided the partially incapacitated prey so her young could learn, through trial, error, and observation, how to safely catch and kill them.

The kittens often lost (and were sometimes bitten by) the prey items in the first few weeks she took them on hunting excursions, too clumsy and inexperienced to master the new game, but as the summer progressed into fall, their increasing maturity-combined with lots of practice pounces, mock battles, and other forms of earnest play - began to hone their coordination, and they gradually became more adept at hunting. She stopped providing them with food unless she made a big kill, but still took them hunting with her (or perhaps she simply tolerated them following her), sometimes in fields for grasshoppers and mice, sometimes

along the swamp edges for rabbits and hares, and with the incentive of empty bellies they learned how to move silently, to stalk, and eventually, to kill.

When fall gave way to winter, her patience with kittens had begun to fray. Her male kitten now outweighed her by a few pounds, and the two females were almost identical to her in size. An experienced observer could still differentiate between the adult and the kittens by subtle differences in their faces (even a grown kitten has a "baby-faced," less prominent snout than an adult), but in less than a year they would all be essentially indistinguishable.

Not long after the first snowfall in December, the male of the litter left the family. He would head east for 20 miles, discretely avoiding territorial disputes with two mature males during his week-long journey, before he found a suitable vacant territory where he could settle. It had been held by another male for almost a decade, but the former owner had passed

The chicken keeper found her peering out at him from beneath the coop, "saw the quills in her jaw, deduced the situation, and allowed her to keep her prize without reprisal..."

away recently due to the cumulative effects of age and multiple parasitic infections, and the new male had soon sprayed the former's scent posts as his own. Two other young-of-the-year bobcats, a male and a female, would wander into the same area during the following weeks. The new owner attacked and chased the male from the vicinity in

short order, but allowed the female to remain unmolested. Part of the territory she would eventually establish would fall within his own, and in time she might

bear his kittens.

The two female kittens remained with their mother longer, but sometimes went off on solo hunts when they were hungry and their mother, satiated with a recent kill, had no desire to hunt. Before the start of the breeding season one encountered a porcupine on a trail and, smelling rodent, attempted to bite it. An experienced adult can sometimes manage to kill a porky without serious consequences, particularly in deep snow, but even for them it is a serious gamble and usually not attempted unless the hunting has been very poor indeed. The kitten's fast reflexes allowed her to dodge the worst of the blow from the porcupine's tail, but part of her face absorbed more than a dozen quills that luckily missed her eyes.

The instantaneous pain caused her to abandon the attack immediately, and she spent the next several hours trying to rid herself of the barbed, ratcheting needles in her face, gums, and paw. She was only partially successful. Three days later, having failed to secure a meal due to the debilitating pain from the tormenting quills, she was beginning to starve. She wandered out of her mother's territory searching for anything she could eat, and



on the fourth night after her wounding, found herself drooling over the smell and noises of a large concentration of birds. They were in an enclosure protected by wiry mesh, but she was able to pull a section of it off the wood frame and enter the enclosure to a cacophony of bird noise. She quickly grabbed a flapping bird and took it under the cover of the enclosure to eat it in seclusion.

The chicken keeper came out of his house and found the young cat staring out from under the coop at him, too famished and weak to leave its meal even in the interest of self preservation. To his credit, he saw the quills in her jaw, deduced her desperate situation, and allowed her to keep her prize without reprisal. He did, however, reattach the wire the next day so she couldn't take any more hens. The cat was seen by several informed neighbors in the weeks ahead as she lingered in the area, mostly collecting mice and rats around horse barns, but eventually she moved on, having survived her wounds and hunger thanks in large part to the mercy of one crucial, uncontested chicken dinner.

As mating season came around again, the mother cat became increasingly impatient with her remaining daughter, who had lingered with her far longer than any of her previous young. As her belly again began to grow with a new batch of kittens,



Her next litter already showing in her belly, a mother bobcat displays aggression toward a kitten from the previous year. Some litters are born late and so have to remain with the mother right through the winter (which is likely the situation in this case) but by the time spring arrives, every mother's patience starts to run out.

she began to snarl whenever the daughter approached. One evening a month before she would have kittens again, the mother



awakened to find her daughter had finally left, probably a little better trained and a little more experienced than her siblings for having remained with her mother so long. She would eventually establish a territory bordering her mother's, and, at the age of 5 – the same age her mother had been when she was born – she moved back into her mother's vacant territory and ensured the continuation of the clan, along with the continued alertness of the local rabbits and hares...

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