North American River Otter *(Lontra canadensis)*. Photo by James Bresnahan

A RIPPLE OF FUR:

The Return of the North American River Otter

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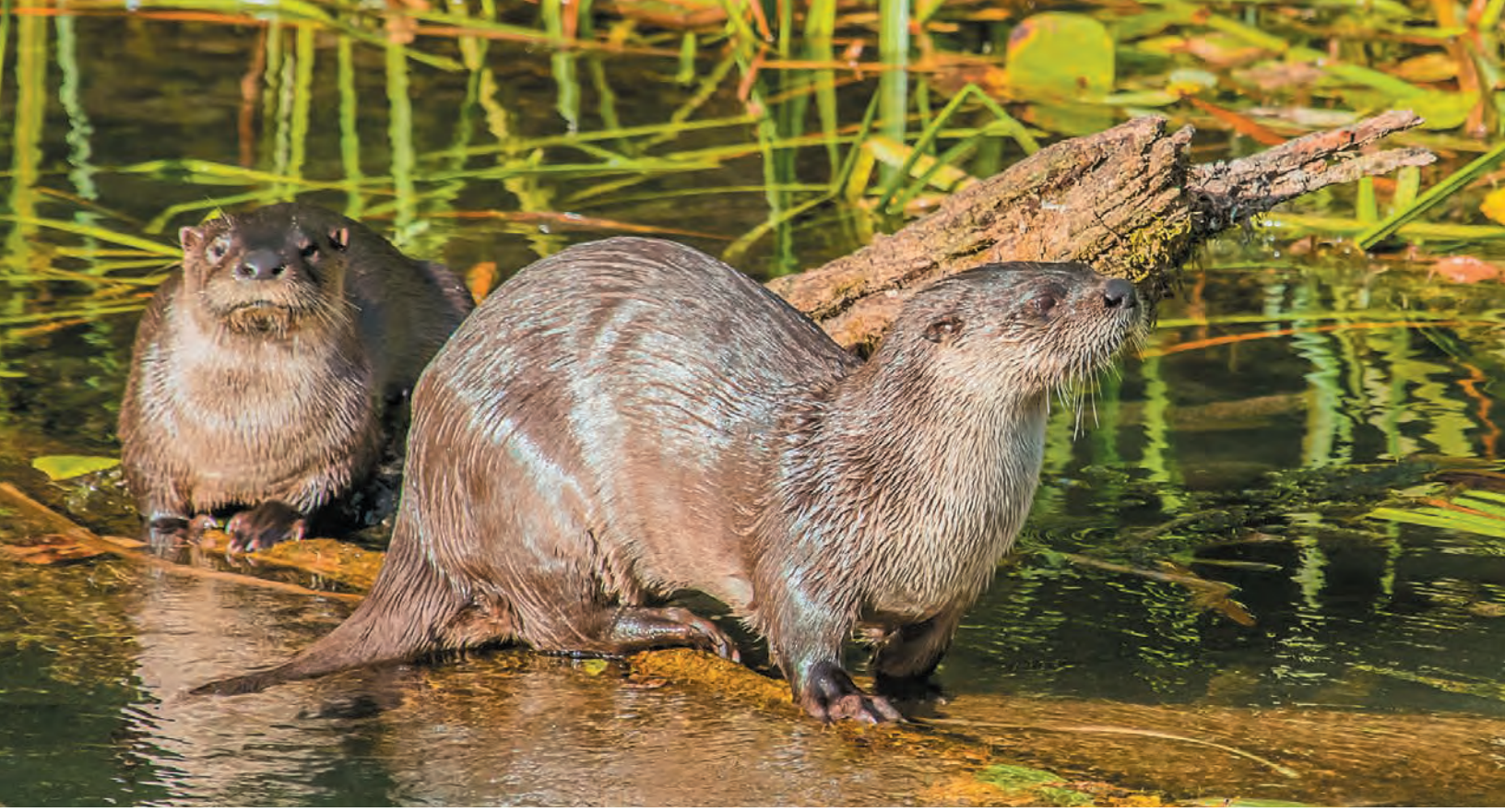
When did river otters vanish from Kansas? Scientific literature, decades of it, suggests that the animals were extirpated more than a century ago. If we trace the currents of those studies to their headwaters, we find that the last official record consists of just two sentences, not even as many words as a person could count on the toes of an otter before the animal slipped from the bank and swam away. D. E. Lantz, from the US Department of Agriculture, consigned them to the past in his *List of Kansas Mammals*, published in 1904: "Formerly common, but now rare. One was captured near Manhattan in September, 1904." The North American River Otter was, by that time, reduced to something less than a third of its historic range in the contiguous states. Despite legislation passed in 1911 prohibiting their hunting or trapping, water pollution and habitat loss, unaddressed for decades, ensured that Kansas saw no rebound in the animals' population. In the years following WWII, as DDT and other agricultural pesticide use expanded, the concentration of contaminants at each step in the food chain would have posed a danger to any top predator, including the piscivorous, or fish-eating, otters. By the 1970s, the US Fish and Wildlife Service grouped Kansas among eleven states where the species was extirpated.

However, the 1970s were a time of engaged environmental awareness in the country and efforts to reverse decades of escalating pollution and habitat destruction attracted widespread popularity and, critically, bipartisan political support. Following nearly a decade of public conversation spurred by the publication of *Silent Spring,* Rachel Carson's denunciation of sweeping pesticide use, the Environmental Protection Agency was formed to establish and enforce standards for air and water quality. Congress approved the Endangered Species Act, giving an essential tool to environmental organizations and wildlife management agencies alike, to aid in preserving not just the DNA of a species residing in the bodies of individuals, as earlier hunting legislation had done, but as the continued presence of the species in intact ecosystems, as well.

In this new policy environment, a coordinated effort was launched to reintroduce river otters in sufficient numbers to establish viable breeding populations, with important benchmarks set in states surrounding Kansas. This "species restoration effort," as the USFWS explained, would be "slow and expensive"—the estimated cost of capturing a single individual would be equivalent to $1000 in today's prices. From 1976 to 2010, more than 4100 otters were captured in areas of abundance and relocated across twenty-two states. The earliest releases took place in Colorado, eventually totaling eight-six individuals. The state of Missouri was a leader in both developing protocols and racking up numbers of animals imported—over eleven years, propelled by the personal charisma



and administrative ability of biologist Dave Erickson, the Missouri Department of Conservation Office relocated 845 individuals, close to twice as many as the next runner up (which was Tennessee) and published guidelines for future efforts. The biologists recommended a minimum of 20 individuals for any release site; they used a radio-implant tracking system recently developed by researchers in Idaho to follow the animals' dispersal after being released. Meanwhile, Nebraska received 159 individuals from a variety of locations—Alaska, British Columbia, Michigan, Louisiana, Idaho, Minnesota, and Ontario.

It's both sobering and encouraging to examine the records from what could be called a campaign to enable otters to retake their former territory. Globally, thirteen species evolved in nearly every continent (excepting Antarctica and Australia), although an aquatic rodent, the indigenous rakali, fills that habitat niche in Australia, and in New Zealand—the islands whose only native land mammals were bats—the *waitoreke*, an otter-like mammal, emerges occasionally from mysterious, rare 19th century reports. From the six-foot long Giant Otter (*Pteronura brasiliensis*) of South America (estimated at 5000 individuals) to the Asian Small-clawed Otter (*Aonyx cinereus*), which measures under two feet, the many forms that these water-weasels take have been in decline. The Hairy-nosed Otter from Southeast Asia was declared extinct in 1998 but they have subsequently been rediscovered in Vietnam, Sumatra, and Cambodia; the current population is estimated at fewer than three hundred individuals.

So often the stories about restoring wildlife populations balance on almost impossibly small numbers, located in isolated pockets—the single colony of Black-footed Ferrets rediscovered in dusty Wyoming; the 27 California Condors trapped from the Coastal Range and caged for breeding. A similar precipice, or bottleneck, did not befall *Lontra canadensis*. The national recovery campaign involved more than forty source locations, generally grouped from the Northwest, the Great Lakes, the Mississippi Delta, and a few locations along the Eastern Seaboard.

Kansas joined this effort in 1983. The Kansas Fish and Game Commission's Research and Survey Office, located in Emporia, conducted extensive reviews of potential release sites. The commission's furbearer biologist at the time, Neil Johnson, assessed likely locations, based on the water quality and the fact that few people lived in the areas. The list was narrowed to two possibilities: Mill Creek in Wabaunsee County and the South Fork of the Cottonwood River in Chase County. Because of the proximity to the Emporia office, the latter was selected, and the team prepared a color-coded map indicating permission from local landowners to work on their property, as they had earlier with an initiative to release and study pronghorns. Gerald Horak, a wildlife biologist with the Fish and Game Commission, had also studied prairie-chickens in Chase County, and Lloyd Fox, retired Big Game Coordinator for Kansas, believes that the contacts made then were "extremely valuable. People knew [Horak] and liked him and therefore trusted things he supported," Fox recalled.

Soon the Kansas office contracted with the Minnesota Department of Natural Resources. Two former conservation officers, Ray Thorpe and Marvin Smith, were paid $150 per animal to trap and transport otters, by commercial airline, to Kansas City. Seventeen individuals originated at Rainy Lake, in Voyageurs National Park; later, two additional otters arrived from Idaho. Local veterinarians surgically implanted transmitters to allow tracking of the animals. All the newly-arrived northerners were released onto a gravel bar of the South Fork of the Cottonwood River, not far from Sharps Creek.

Two North American River Otters *(Lontra canadensis)*. Photo by James Bresnahan

Point your smartphone's camera at this code or follow this link https://youtu.be/ToFkK2RUR0k to see video filmed by Don Eccles of River Otters in Southeast Kansas eating and socializing.

Don Eccles was an undergraduate student at Emporia State University when his professor, Dwight Spencer, asked him if he'd like to be involved in the state's reintroduction program. It would start as a summer job: helping to handle the animals from the time they arrived in Kansas City to their release on the river. Then he'd shift to monitoring and documenting the animals' dispersal. "One requirement of joining the project was completing a master's degree," he recalled. No question about it: Don said yes.

On a recent day in September, goldenrod-bright and warming towards ninety degrees, Don returned to find the release site, the first time back in about three decades. By then he, and the senior members of the release team, were all retired. Ownership of property had changed hands—the release site, and most of the initial home ranges the otters expanded into, was all private land. After a few false starts, and some suspicious questioning from a local landowner, three otter enthusiasts—photographer Dave Rintoul, Don himself, and I—found our way to the tree-lined banks. We looked for prints in the mud (raccoons, but no sign of otters that day), we watched the placid current, and Don recounted his work tracking the animals following their release.

For a couple of years, Don's day job was basically moving across the landscape, seeking out the otters. At first, the team relied on radiotelemetry—the implanted transmitter had an expected battery life of up to two years. Locating otters mostly meant hiking the riverbanks and canoeing the waterways carrying the radio receiver like a repurposed dowsing rod. "Oftentimes," Don later wrote, "no signal could be picked up unless the searcher was positioned over the otter with the antenna pointing down. Sometimes no signal could be picked up even this close when I knew an otter was in a den directly beneath me." Aerial monitoring, though both less romantically rustic and more expensive, allowed for greater distance of detection. By plane, the researchers could locate animals who traveled surprising distances over land. The transmitter's detection distance on the ground was about a quarter of a mile, so it was important to follow the stream's every bend and turn. Canoeing the watershed became an old-tech augmentation of the high-tech pursuit.

"That's when I really came to love the Flint Hills," he said. I thought at first that must mean he'd grown up far from the area, but no—his family lived in rural Gridley, less than fifty miles from the unique Flint Hills landscape where his wildlife study drew him ever more deeply into a sense of place.

Throughout the summer of 1983 and into the school year, working weekends and during breaks, Don combed a sizeable part of the Cottonwood River watershed, recording each radio-signaled encounter. Only three times during the study period did he actually see one of the otters he was pursuing so intently. Twice, there were brief encounters. But on one occasion, for roughly half an hour, he watched the animal ice fishing—diving into a hole in the ice, remaining submerged for up to a minute or so, and then popping back out to eat its catch. "Sometimes," Don recalled, "the otter would climb completely out of the water to eat, and sometimes it would just hold onto the edge of the ice and gulp down its food."

Later, for his master's thesis, Don explored other surveying methods. Otters establish scent stations, where individuals with overlapping territories deposit feces, urine, and individual updates about health and fertility above the waterline. At these locations, also called "latrines," persistent researchers, as well as other otters, can keep updated about the population. Monitoring otters through their tracks in the mud is called a "sign survey." Outside the clear, instructive pages of a field guide, it can be hard to tell one riparian visitor from another, especially raccoons from otters. Don took a trip to the Sunset Zoo in Manhattan to study real otter footprints in real mud.

Overall, the nation's otter restoration effort is an encouraging story. The widespread reintroductions have been called "one of the most ambitious and extensive carnivore efforts in history." A team of researchers recently estimated that, across the contiguous US, the distribution of river otters increased by 13.7% since 2000 and the animal now occupies 90% of their former range. However, the campaign had many fatalities along the way. It's unclear from the national data how many of the 4100 individuals transported for reintroduction actually established a territory and became part of a breeding population. Otters—so ebullient and energetic if you can glimpse them without being seen yourself—seem to be mortally prone to stress in captivity. In his 1961 memoir, *Ring of Bright Water*, Gavin Maxwell described the otters he attempted to raise as pets entering what he called "a coma" as "a voluntary act independent of exhaustion"—something that sounds, in his description, like acute despair. Of the nineteen otters who touched down in Kansas City, six died while still in captivity; the cause of death was shock and bleeding ulcers. Two others died within days of release. This sensitivity led the Kansas team to quickly change their protocol. Instead of holding the animals a few days following the implantation for observation, as they'd planned, they drove straight from the vet's to the riverbank, so that as soon as the animals emerged from the anesthesia, they could, in their rumpling gait, scurry away. Meanwhile, the Minnesota team injected the captives with valium to help control their stress.

The Kansas reintroduction effort, initiated nearly forty years ago, racked up a 42% mortality rate. Much has been learned in the decades since those early days of capture and transportation. And sometimes the animals were the victims of bad luck. "There was a nonstop flight from International Falls, MN to Kansas City, but flights from Idaho required at least one transfer," remembered Fox. "One of the otters from Idaho died during transport because of a delay at an airport. The other was stressed and died shortly after arriving in Kansas. We never attempted to obtain additional otters from Idaho."

The number of otters who actually dispersed into the watershed to—potentially—establish a breeding population was roughly half the number recommended by the Missouri biologists. Some accounts of the national effort report nineteen releases in Kansas, but the true number, after deducting the deaths both before and just after the intended release, was just eleven individuals. Despite that low initial total, river otters are again a lithe and lively part of the river ecosystem throughout the eastern—and, to a lesser degree, the central—part of the state.

In the years following the release program, the Kansas Department of Wildlife and Parks sought to monitor the presence of otters in the state. When animals were found as roadkill, or what's called an incidental trapping—turning up, say, in a trap intended for muskrat—the agency took note. When the Department received an otter carcass, it would undergo a necropsy to examine the animal's state of reproductive and nutritional health when it died. But in addition to these studies of the dead, the database increasingly contained reports of live sightings. By 1995, people were seeing river otters at least annually on the Flint Hills National Wildlife Refuge, thought likely to be the descendants of the transplants from Rainy Lake because of their proximity to the South Fork, and in Cherokee and Crawford County, along the border with Missouri. Two years later, occasional reports came in from other Kansas rivers: the Verdigris, the Marais des Cygnes, the Kaw, the Delaware, and the Republican. The increasing population led the state, in 2011, to establish a trapping season from mid-November through March. Historically, otters were found in the western part of the state, but the drawdown of the aquifer and reduced stream flows means the western waterways, curtailed to intermittent or ephemeral flow, cannot offer habitat to support the animals.

Nonetheless, in official statistics from the 2020-21 season, trappers were bagging otters in twenty-four counties in the state; over the last decade, an average of 148 animals have been trapped by licensed hunters. The reintroduction and management of otters in Kansas has been housed, from the start, in agencies dedicated to hunting and the statistics collected pertain to the "harvest" of the animals' fur under that state's hunting and trapping regulations. There is no official reporting system for community scientists, no way to tabulate the chance sightings that birdwatchers, canoeists, hikers, or other wildlife enthusiasts may have along Kansas' waterways as the animals expand throughout the state. Still, Matt Peek, a furbearer biologist with Kansas Department of Wildlife and Parks, says the office has documented sightings from Saline, Sedgwick,Trego, Republic, and Smith counties. Another, which he considers a good report, occurred on the Republican River in the far northwestern corner of the state.

Perhaps, though, the otters were never truly gone. It might be possible, with DNA study, to determine whether the animals encountered in the state today are descendants from the individuals imported from Minnesota, or from the hundreds brought to Missouri from Louisiana. However, no one is undertaking that kind of research. But Don believes a remnant population of river otters was still hanging on in eastern Kansas, even before the animals began to arrive from their northern homes. A man he knew found a carcass on the banks of Rock Creek, near where it empties into the Neosho River—that is, actually in the city limits of Burlington, Kansas. The man, a schoolteacher, made his find not long before the Kansas release program had begun. "He was pretty certain what he had, and he showed it to me. I think it was an otter," Don said. Others point out that it can be easy to mistake beaver, otter, and muskrat; and it appears the skull was disassociated from a full skeleton, further inviting skepticism about its provenance.

Whatever happened to the animal "captured near Manhattan" in 1904? If it became part of a collection at Kansas State University, I can't find a record saying so. The Dyche Museum in Lawrence has a specimen that was collected on Mill Creek, which, about twenty-five miles as the crow flies, could be considered "near." However, the record is incomplete—the name of whoever trapped or shot the animal isn't given, and neither is the date—both of which have long been standard practice for specimens intended for scientific collection—although the cataloguing sequence indicates it would have been before 1910. The skull was, says a brief note, "from a mount"—and, in the dearth of other information, I find myself wondering just what that meant. At the time, no legislation regulated the taking or sale of pelts; probably the "mount" had never been the full body, posed in some diorama with painted riffles and ambiguous trees. More likely, it had been just a skull-on-a-pike, one label in a display case of "Kansas Mammals" or

It's been a long day for this River Otter
Photo by James Bresnahan

"Members of the Weasel Family." Maybe it was a curio, sealed in a bell jar with that much-repeated tag line, "captured near Manhattan, 1904." Somehow, it seems a little melancholy for the evidence from history to be so displaced, fragmented, and uncertain.

I've made a few visits to places where friends report they have seen otters, hoping to see one myself. One morning, a small group bushwhacked along a stream not far from the Big Blue River, searching for fishbones and feces, hoping we might find a latrine site. We came away with an eruption of chigger bites but no sign of otters. Another time, we peered at the bank of a clear-running creek, wondering whether the prints—set deep into very soft mud—could possibly be the otter a neighbor had seen nearby. Too small, we decided, even for a young-of-the-year.

But it's good to know the animals are out there, each one a ripple of fur gliding under a bower of cottonwoods or loping along the bank. A few years ago, while out bow hunting, Don found a family group—probably siblings, not yet separated after leaving their mother—in a stream in Coffey County. Six wriggling otters hauled out on a fallen log, some of them crunching and swallowing whatever prey they'd caught, others snuggling and grooming one another, a roiling visitation of energy and whiskers, fur and busy feet. Only a few minutes, they played out their carnivorous, vigorous lives. Then, as if on a signal, they slipped past a sparse canopy of oak leaves the color of dried blood, leaving the water still enough to reflect the pale, clean turquoise of the sky.

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