

Animals Tell Audubon of Kansas That **OUR HABITAT MANAGEMENT IS SUCCESSFUL**

Jackie Augustine

How does Audubon of Kansas know that burning and removing cedar or Siberian elm improves the habitat? How do we know if adding a nature trail disturbs wildlife? The animals tell us! Audubon of Kansas engages in a suite of wildlife monitoring activities to document how animals are responding to our habitat management. The exact method of monitoring necessarily varies by the organism being studied.

Mountain Lion

We are partnering with the state of Nebraska to monitor mountain lions (*Puma concolor*) at Hutton Niobrara Ranch Wildlife Sanctuary. The goal is to estimate movements and population size of this rare predator.

AOK's Hutton Niobrara Ranch Wildlife Sanctuary Coordinator Lana Arrowsmith has led that effort. In spring and fall, she sets out game cams in strategic locations to monitor wildlife movements. When movement is detected the cameras record whatever tripped the shutter. When two mountain lions were detected simultaneously in one photo, she contacted the state wildlife biologists. They had her find a fresh roadkill deer, bring it to the sanctuary, and check the carcass daily. She can tell when a mountain lion has visited the carcass if the liver and heart were eaten, and she notifies the state wildlife biologists again. They place a live trap in the area with a device that alerts them if the trap closes. When they receive an alert, the biologists visit the trap as soon as they are able (within an hour or two). They tranquilize the animal, take measurements of its size and condition, and fit a tracking collar on it. Upon release, the biologists can monitor the cougar's movements from the comfort of their office.

In March, a young male was captured, collared, and

released. He was four-to-five years old and weighed 150 pounds. Hutton is one of several properties that he visits on both sides of the Niobrara River. A second mountain lion has also been seen on the game cameras. Hopefully, it is a female and we will see her on the camera leading her kittens soon!

Prairie Grouse

Monitoring populations of prairie grouse such as Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*), Greater Prairie-Chicken (*T. cupido*), and Sharp-tailed Grouse (*Phasianellus*) is easy, if you have good hearing and know what to look for. Both species can be heard from a mile or more away on a calm morning. I have been studying prairie grouse for 20 years. I quickly found the lek sites at Hutton by listening for the birds starting a half hour before sunrise to two hours after. (See "Prairie-Chickens: Home on the Range" in last year's Prairie Wings). Following the detection of the lek, I observe the location from a blind placed on the edge of the lek.

Last year, only three male Greater Prairie-Chickens were observed displaying, but six were observed this year. Sharp-tailed Grouse numbers are more steady at about 17 males in both years.

Marsh birds

Rails are small, secretive waterbirds found in wetlands. They are difficult to see and they vocalize infrequently. Some birders call them "invisible"! The two most common species, Virginia Rail (*Rallus limicola*) and Sora (*Porzana carolina*), prefer dense vegetation. Their bodies are compressed laterally (left to right) so that they can slip through small gaps in the vegetation. Some believe this body shape is where the saying "Skinny as a Rail!" originated. Rails are related to American Coots (*Fulica*



Sora adult (Porzana carolina). Photo by Dave Rintoul

americana), which are much easier to see. Coots, which are large, duck-sized birds, have dark plumage and white beaks. We are conducting surveys for these secretive waterbirds at Hutton Niobrara Ranch Wildlife Sanctuary. The surveys call for five minutes of listening followed by 30 second playbacks of the birds' calls and 30 seconds of listening. The birds are more likely to vocalize after hearing their call played; however, playbacks should not be used routinely or "for fun" as doing so causes disturbance and distracts the birds from their normal activities. Three surveys are conducted two weeks apart during May and the first half of June. I detected 15 Virginia Rails and seven Sora using the wetlands at Hutton. In the next year or so, two small dams will be added to two areas in the wet meadow along the Niobrara River at Hutton. The US Fish and Wildlife Service will construct these dams as part of the wetland easement to prevent the water from draining and to spread it out over a larger area. We expect these dams to increase the amount of wetland habitat and increase the population size of both Virginia Rails and Sora.

Songbirds

Point counts are the standard way to determine the population size of songbirds in a given area. They consist of an observer standing in one place for three minutes while recording all the birds seen and heard. With 5000 acres, Hutton point counts are approximately 0.5 miles

apart and vehicles are used to travel between points. With 240 acres, Achterberg point counts are 100 meters apart and travel is by foot. The distance between the points reflects the size of the area to be surveyed.

A slightly different method is used at Mount Mitchell. Because the area to be covered is rather small (about 25 acres), all birds seen and heard

are counted as an observer walks slowly over a particular route.

All bird surveys were conducted in early June.

The Hutton survey has been conducted annually since 2006. During that time, we have seen the number of Horned Larks decline. This reflects management of the area. When we acquired the property, it was over-grazed and not even a golf ball could be hidden in the grass. Horned Larks (*Eremophila alpestris*) love this kind of habitat, but it is not good for many other species. AOK grazed the property at a significantly reduced rate, and now the property has a healthy stand of grass even in the drought conditions which we are currently experiencing. While Horned Larks declined, the numbers of Northern Bobwhite quail (*Colinus virginianus*) increased. Bobwhite prefer more grass to hide their nests and chicks.

The Achterberg and Mount Mitchell surveys have only been conducted for two years each, but we are already making interesting observations. There appear to be two coveys of Northern Bobwhite at Achterberg. One covey utilizes buffer strips along Horse Creek and the pastureland south of the property. Another covey is north of Bullfoot Creek in the remnant prairie and pollinator plot. During the first year of the survey, a new species was recorded for the county, an Acadian Flycatcher (*Empidonax vireescens*). Acadian Flycatchers



John Schukman conducting a bird count at AOK's Hutton Sanctuary. Photo by JK Augustine

prefer old-growth forest. This bird was likely just migrating through, but it shows the quality of the riparian woods. Its appearance on Achterberg also shows how much forests have grown in the area. Achterberg is located in Lincoln County, which also is known as "Post Rock County." When European settlers arrived, there were not enough trees to build fences, so ranchers used limestone rock as posts for fencing.

Mount Mitchell was burned the previous spring during the first year of the survey, but was unburned during the second year. Mount Mitchell is not grazed by cattle, so the grass is allowed to grow tall and thick. Burning removes the previous year's dead standing grass, but without burning, the grass provides ideal nesting habitat for various songbirds. Some songbirds only nest in prairies that are not burned or grazed for a few years. One such bird is the Henslow's Sparrow (*Ammodramus henslowii*). Several were spotted during the second year of the bird surveys. You have to appreciate subtle beauty to appreciate Henslow's Sparrows. These small birds are mostly brown with a hint of yellow by their eye, a greenish wash behind their head, and a few short

streaks on the upper breast. Their song is just as uninspiring—a short "tsezlik" that isn't very loud and only lasts about a half of a second. However, when you see a Henslow's Sparrow, you know you are looking at an icon of a vanishing habitat. In a state where most native prairie is grazed annually by cattle, these tall, thick, ungrazed prairies are hard to find. The lack of habitat is why the Henslow's Sparrow is listed as a "Species in Need of Conservation" in Kansas. No Henslow's Sparrows were observed during the first year of the surveys when the area had been

burned that spring.

Point counts are great for getting a count of the number of breeding birds in an area. What if you want to learn more about birds migrating through? Those birds may be less likely to sing, making them harder to detect.

Recently, a Motus Tower was installed at Hutton. The Bird Conservancy of the Rockies received a grant to deploy towers throughout the Great Plains and we are honored to host one of them. We repurposed a nearly 100-year-old, nonfunctional windmill into a state-of-the-art Motus tower. These towers allow scientists to track the movements of individual birds. Before the development of Motus towers, satellite transmitters had to be used to track the long-distance movement of individual birds. The disadvantage of satellite transmitters is that they are large and heavy; the smallest bird that can be tracked with a satellite transmitter is a Lesser Prairie-Chicken (which weighs 1.75 pounds). Because the Motus transmitters are small, they can be placed on small birds like sparrows. Each individual bird has a unique signal that is picked up by the Motus



Pirate Spider (family Mimetidae) at Hutton. Photo by Eric Eaton

tower when the bird comes within a few miles of the transmitter. The transmitter relays that information via wifi or cellular signals to a database. The Motus tower has already detected 14 different individuals, all of them Swainson's Thrushes (*Catharus ustulatus*). This indicates that Hutton lies along an important route for migrating songbirds. One Swainson's Thrush was tagged in western Montana on September 19. It stayed at the place of capture for four days, presumably eating like crazy as it prepared for the next leg of its journey. It was last detected at the place of capture around 2:30 am on September 24. The next three detections were all on the same day, September 24: 4:30 am at another site in western Montana, 4 pm at Hutton Niobrara Ranch Wildlife Sanctuary in Nebraska, and 10:30 pm in Missouri. That thrush traveled 1227 miles in 20 hours! That's an average speed of 60mph! It would take us 23 hours to drive that route in a car.

Fish

Biologists from Nebraska Game and Parks monitor the small fish in Willow Creek. As we learned in last year's *Prairie Wings*, small fish are important because they are at the bottom of the food chain. Several state threatened species are found in Willow Creek. Biologists use electroshocking to survey fish. While wearing rubber waders, they send an electric current into the stream. This stuns the fish and they float to the surface. Fish are then scooped up in nets for processing. Species, sex, and

length are recorded before they are released back into the creek. In an effort to standardize the sampling, they survey a total of 40x the average stream width at each station (minimum: ~500 feet and maximum: ~1000 feet). This method allows them to adequately sample various types of habitats found within the stream (i.e., riffles, runs, and pools). While conducting their survey on our property, they sampled a total of 216 fish representing seven different species: Blac-

knose (*Rhinichthys atratulus*), Longnose (*R. cataractae*), Northern Redbelly (*Phoxinus* sp.), and hybrid Finescale X Redbelly Dace (*Phoxinus eos* x *P. neogaeus*—threatened in Nebraska); Creek Chub (*Motilus atromaculatus*), Fathead Minnow (*Pimephales promelas*), and Plains Topminnow (*Fundulus sciadicus*).

Insects

One doesn't have to look hard to find an insect. We had two insect specialists, Eric and Heidi Eaton, visit Hutton during a work week toward the end of July. Eric Eaton is the primary author of *The Kaufman Field Guide to Insects of North America* and the sole author of *Insectpedia*. Both Eric and Heidi record the species they see using photography. Their cameras also record the location and time that the photo was taken. No other equipment is necessary, unless they want to look for insects at night. We all know that moths are more likely to be active at night, but there are many other insect species that are also active at night. Many of these nocturnal species are attracted to lights. Eric turned on the porch light and photographed insects landing on the front doors. Heidi set up a sheet on the back patio and pointed a black light at it. Different species were attracted to the different types of light. They upload all their observations to iNaturalist. Eric submitted 227 observations and Heidi posted 141 observations (they tried to avoid overlap). See all the plants and animals recorded at Hutton at <https://www.inaturalist.org/projects/hutton-niobrara-ranch-wildlife-sanctuary>