Iowa NatureMapping
Finding All the Pieces to Keep Common Species Common

Coordinator's Comments

"I know it's true! I heard it from a guy who knows a guy who saw it happen!"

Greetings from Iowa State University, home of the Iowa NatureMapping Program. I hope this newsletter finds each of you doing well and enjoying the autumn season. This newsletter is primarily to update you on the data that has been collected and submitted in the last five years. I hope you take the time to look over the analysis of the data on the following pages. I think you will be amazed at how extensive the NatureMapping data is. However, I want to take this opportunity to discuss a relatively new and much talked about rural legend, and ultimately, how important your role is in actively mitigating misconceptions through direct involvement in NatureMapping.

For my job, I get the opportunity to travel around the state, interacting with all sorts of people. One of the interesting topics of conversation recently has been the mountain lion sightings. Perhaps you have been following this, as I have. The conversations have run the gamut, from factual to hearsay. Here are the facts. Since 2001, there have been 12 credible sightings of mountain lions in Iowa, according to the Iowa Department of Natural Resources. Two mountain lions were hit by vehicles and another two were shot. Additional reports were confirmed by tracks, scat, and other reliable descriptions. Yes, mountain lions have definitely been wandering Iowa. But why?

Despite the hard facts, there definitely is a misconception about why mountain lions are in Iowa. The most critical comment I've heard is that the Iowa "DNR is trapping them from the wild elsewhere and releasing them in Iowa to control the white-tailed deer population." What amazes me is how truly convinced people are that this is true, not to mention the methods by which they believe the DNR is releasing them: semi tractor-trailers in the middle of the night, black helicopters, etc. Many who believe this are quite angry with the DNR, thinking they are once again pulling one over on the public. I can assure you, however, the Iowa DNR has not 'stocked' or introduced mountain lions into the state nor is there any consideration of doing so.

Still, I can see why this rumor can spread and why it is believed. At some level, it makes sense. Mountain lions were once present in Iowa and were a natural predator of white-tailed deer and other prey. Furthermore, hunting in some areas of the state is still not maintaining acceptable numbers of deer. Finally, and perhaps the primary reason, it is human nature to latch on to rumor and hearsay, and the farther stories travel, the more convincing they sound. Remember the old saying, though, "Don't believe everything you hear."

American Kestrel

In this Issue

Your suggestions on topics and sections are always welcome.

The truth about mountain lions is not nearly as dramatic, however. Upon examination, one of the killed lions appeared to be domestically raised due to surgically removed claws, and therefore released illegally or escaped. Thus, it is possible some of the other confirmed mountain lions also fall into this category. The most likely hypothesis for the other sightings, based on scientific reasoning and the information gathered from the other mountain lion carcasses, is that these cats, most likely males, are migrating out of established mountain lion country in search of territory and food. In fact, southeast South Dakota, eastern Nebraska, northeast Kansas, and northern Missouri have reported increased mountain lion sightings during the past 5+ years. In an attempt to understand this phenomenon better, DNA testing is currently taking place on the two lions that were shot to determine from where these animals were coming.

So, where does this leave you? Rumor and hearsay breeds distrust. I believe that NatureMapping offers a way to combat false information like that of the mountain lion. NatureMapping allows people to be an integral part of wildlife management. We all have a collective stake in the health and well being of our natural resources, including mountain lions. Being one of those who actively collect and submit reliable and useful data makes you among the best equipped to address the misconceptions about wildlife and its management. Building a knowledgeable and committed constituency for natural resources builds a bridge of trust, understanding, and working partnerships between the public and wildlife management agencies such as the Iowa DNR . Thank you for being that bridge!

- Jason O'Brien

Tiger Salamader

Five Years of NatureMapping Data

It's amazing to us that five years have passed since we began NatureMapping in Iowa. On February 13, 1999 eight people attended the very first NatureMapping workshop at the Iowa 4-H Conservation Education Center. From that day forward, over 800 Iowans from many different backgrounds have attended what we now refer to as the Level I NatureMapping training. For us, it has been such a tremendously rewarding five years!

In five years, NatureMappers have entered nearly 32,000 records representing numerous wildlife species. On the following pages, we have analyzed data up to July of 2004. We have compiled your data in ways that we hope give you a broad understanding of the wildlife data NatureMappers have collected. We have also shown the process of our analysis in a way that shows the potential use of this data.

We are committed to making your data a valuable resource for you and the public and continually seek meaningful ways of distributing the data so its real potential can be realized. Keep looking on our web site for new ways of accessing the data.

Thank you for your commitment to help manage Iowa's wildlife over the last five years. We hope you find the following data as enlightening and inspiring as we do.

An Explanation of the Results

In order to understand the data you have collected over the past 5 years, we need to compile it into meaningful numbers. The method we chose to analyze the data was to compare the locations of each species with the predicted range of the species. We believe this is a good way to assess the overall reliability of the data.

The Iowa Gap Analysis Program (GAP) compiled some 30,000 records of birds, mammals, reptiles and amphibians from various resources: DNR inventories, university research, museum records, and other private and public data sets, representing data collected no earlier than 1950. The locations of each of these species were then used to create likely present-day range maps. In addition, current habitat conditions (landcover) and the most likely habitat requirements for each species was considered when defining the predicted distribution. This was done based on literature review, surveys, and expert review by those familiar with each species. Bird ranges represent breeding, or nesting, locations, based on the 1996 Iowa Breeding Bird Atlas.

The range maps look like a chicken wire pattern overlaid on the state. This is called a hexagonal range map. If a species is known to have occurred or is predicted to occur inside a given hexagon, then the hexagon is shown as a part of the entire range.

For our analysis, we plotted the NatureMapping location points for each species using ArcView GIS software (Figure 1). Then, we overlaid the hexagonal range maps for each species (Figure 2). Using the
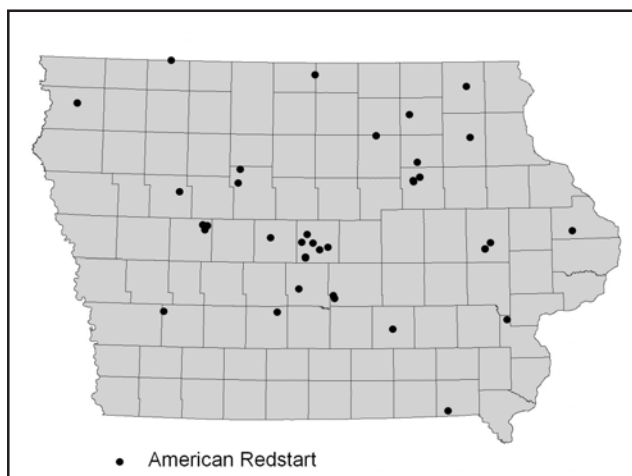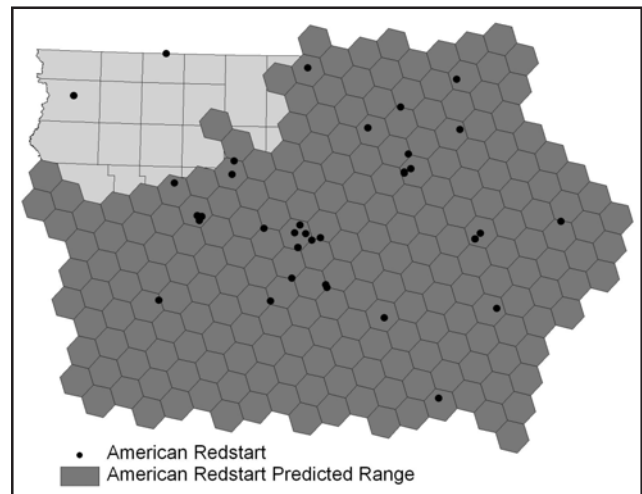

Figure 2

analysis tools in ArcView, for each species we calculated the percentage of all records occurring *inside* its hexagonal range. For example, for the American Redstart, 46 records have been submitted, 43 of which fall inside the predicted breeding range of the American Redstart. This means that 93.48% of the records fall within this species' predicted breeding range. What about the records falling outside the range? Several possibilities exist here. Most of the dates of records found outside the breeding range are during the migration season, meaning these birds are not in nesting territories. It is also possible that at least one of the observations is a nesting pair, possibly indicating that the predicted range is wider than shown.

Since some monitoring sites have more observations recorded for each species than others, we gave each species an equal weighting based on where they are observed. Each species location was counted as just one occurrence, rather than multiple occurrences. For example, if the American Redstart were observed, over time, 10 times at a given monitoring site, and 1 time at another site, both sites would account for just 2 occurrences of the species (one at each site). Rather than having 11 records of the American Redstart, we now have two. We feel this gives a more accurate picture of the percentage of species inside its range. When we do this for the American Redstart, 94.29% of occurrences fall inside the predicted range.

Since the predicted bird hexagonal ranges are based on the Iowa Breeding Bird Atlas data, we filtered all the records to include only those dates that birds are likely to be nesting. For this analysis, we chose

Figure 1

records that fell between May 15 and July 15. This is a very coarse filter to account for *most* of the nesting species, since species such as the Great-horned Owl and Bald Eagle nest much earlier than May 15. We also weighted them just as we did in the last example. When we account for just the observations occurring within the breeding dates, 94.44% of the American Redstart site occurrences fall within the breeding range.

Finally, a composite percentage was calculated for all species, grouped within their classes (birds, mammals, reptiles and amphibians). These figures occur in the center section of the newsletter (see Table 1). It is encouraging that both mammals and birds show a reliability of 97.32% and 97.14% respectively, while reptiles and amphibians show an equally impressive 91.98% and 92.79% respectively. Interpreting individual occurrences of species and those falling outside the ranges will add further insight into the data.

Since NatureMapping is concerned with more that just the species modeled for GAP (GAP modeled 288 species), we did some calculations on non-GAP species as well. Table 2 shows how many species and records have been collected for non-GAP modeled species.

The GAP project also analyzed the status of each of the 288 species based on how their ranges associate with protected land in Iowa. This is known as the "land stewardship assessment." To do this, a rank was assigned to each public or private property that has been give certain conservation protections (city, county, state, federal and private parks, preserves, refuges, etc.). The ranking is based on the permanence of protection, relative amount of natural cover, how comprehensive the management is (i.e. manage for one species or habitat or all species), and type and degree of management assign to each property based on legal and institutional arrangements. Table 3 shows what percentage of monitoring sites occur within the boundaries of stewardship lands. It is worth noting that much of the historic species records (those used in GAP) occurred on public lands. *Nearly 70% of the data collected for NatureMapping occurs on private land, something virtually impossible to accomplish without the support of NatureMapping volunteers!*

NatureMappers have collected nearly 32,000 records,

just as many as used for GAP, accounting for 334 species (Table 2)! Equally impressive is the fact that nearly 1,200 monitoring sites have been created (Table 4). Yet, it is worth noting that while the stats are impressive, over 20% of the registered monitoring sites contain no observation data.

Interpreting the Species Locations

So, what are your data telling us? Even though we have just begun looking at specifics in the data, there are some interesting finds. We will give you some examples to illustrate our initial findings.

The data can be broken into two basic categories, species that fall within their ranges and species that fall outside their ranges. While mis-identifications can and do occur, even to the most seasoned wildlifer, data that fall outside the predicted range should be given special consideration beyond the mere thought that they are erroneous data. Keep in mind that the predicted GAP ranges are based on limited historic data. Some groups of species have data from just one source (academic research, management, etc.). While sources of this data tend to be very reliable, data from just one source can limit the scope of field-collected data, thus limiting the chances that all possible locations have been checked for a species. Following are some examples to illustrate this.
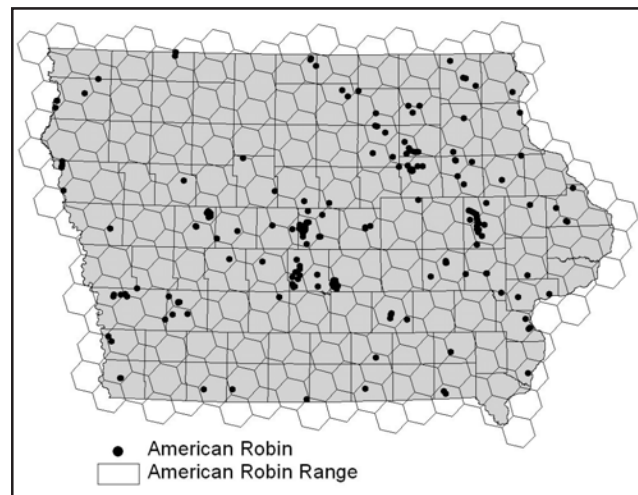

Figure 3

Figure 3 shows the range for the American Robin, a very common yard bird easily identified and found statewide. Many species fall completely within statewide ranges, like the American Robin. Such a common species will be given less scrutiny than other, more sparsely distributed, species.

Those observations that fall outside the ranges can have several explanations. One explanation is that some of the species are mis-identified. Second, since the bird ranges represent breeding ranges, any bird observed during migration may fall outside the predicted range, like the American Redstart in the previous section. Third, it is possible, even likely, that the observations occurring outside the ranges are in fact reflecting a range expansion. Range expansions may be due to recent movements of species, or, recent observations of species always present at a location but never previously documented. Figure 4 shows an example of this. The Six-lined Racerunner and its subspecies, the Prairie Racerunner, occur in eastern and western Iowa respectively, with no connection between them, according to the best evidence available. However, NatureMapping data indicates that this species occurs beyond its accepted range.
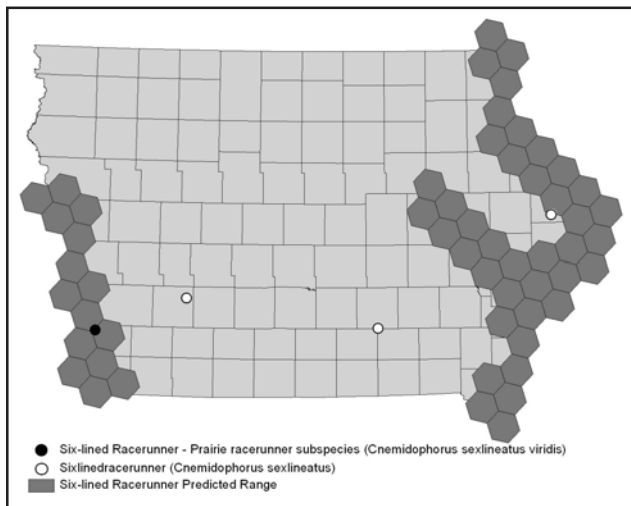

Figure 4

One of the outlying Six-lined Racerunners is in Mahaska County. Recent conversations with Mahaska County conservation professionals indicate that they have previously documented this species in their county. The western most Six-lined Racerunner is in Cass county, and may very well be the Prairie subspecies, considering its proximity to that part of the range.

A final example shows how some NatureMapping data is confirming the GAP predicted ranges. The Spring Peeper is a common small but highly vocal frog. The GAP range shows a disjunct population, and the NatureMapping data reflects this (Figure 5). Are there peepers in the gap? While there is yet no NatureMapping data to confirm this, auditory
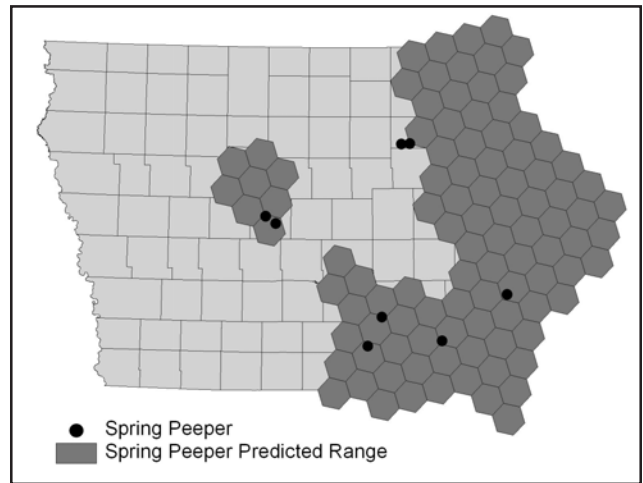
Figure 5

confirmation in Story County points to a connected range.

The data you collect is vital to our understanding of wildlife distributions. Your data is the first step in the data collection process. Once the data is collected, then we can debate its use and implications for natural resource management. We can also publicly debate its viability, something not possible before now. By making the data available to the public, through searchable databases and maps, we allow such discussions to occur.

Where are we going next with the data analysis? We will be sending the data records and GIS maps to various experts familiar with each taxonomic class for a finer inspection of the data. Our initial rough analysis has given us cause to celebrate the quality of NatureMapping data!

Species Lists

Beginning on page 8, you will find the complete list of species observed by NatureMappers. The species are broken out by class, as well as by those modeled by GAP and those not.

Western Hognose Snake

Table 1

		Number of Records within GAP Range for All Species	Total Number of Records for All Species
Species Groups	Total # of Species		
Birds*	**154**	24061	24559
Amphibians	**14**	547	672
Reptiles	**27**	264	285
Mammals	**40**	2975	3111
Total	**235**	27847	28627

Total Sites Based on Breeding Dates

* Includes species recorded during migration; The occurrence of each species is com
**# of sites for species within Approximate Breeding Dates (May 15-July 15)

Table 2

Non GAP Modeled Species			
Species	Total # of Species	Number of Records within GAP Range for Each Species	Total Number of Records for Each Species
Birds	**93**	NA	**2596**
Amphibians	**0**	NA	**0**
Reptiles	**1**	NA	**3**
Mammals	**5**	NA	**23**
Total	**99**	NA	**2622**

Total Species	**334**	**Total Records**	**31249**
Total Species General**	**27**	**Total Records**	**479**
Total Species All	**361**	**Total Records All**	**31728**

**Wildlife not identified to species level; (e.g. Mouse Species, Bat Species, Hawk Species, etc.)

ed Species

% of Records Inside GAP Range for All Species	Numbers in theses columns based on weighted calculations			
	Number of Sites within GAP Range for All Species	Total Number of Sites for All Species	% of Sites within GAP Range for All Species	Average Number of Records per Site
97.97%	6402	6695	95.62%	3.67
	1767**	**1819****	97.14%	**NA**
81.40%	193	208	92.79%	3.23
92.63%	195	212	91.98%	1.34
95.63%	945	971	97.32%	3.20
97.28%	7735	8086	95.66%	3.54
	1333	**1391**	**95.83%**	**NA**

npared to its predicted breeding range

Table 3

NatureMapping Monitoring Sites Related to GAP Stewardship Boundaries (Public & Private Protected Land)					
Total # of Sites	# inside Boundaries	# outside Boundaries	% of sites inside Boundaries	Proportion outside/inside	Proportion inside/outside
1128	344	784	30.50%	2.28	0.44

Table 4

Number of Monitoring Sites with Data	877
Total Number of Monitoring Sites	1128
Percent of Monitoring Sites with Data	77.75%

GAP Modeled Birds

Bittern, American
Bittern, Least
Blackbird, Red-winged
Blackbird, Yellow-headed
Blue Jay
Bluebird, Eastern
Bobolink
Bobwhite, Northern
Bunting, Indigo
Cardinal, Northern
Catbird, Gray
Chickadee, Black-capped
Coot, American
Cormorant, Double-crested
Cowbird, Brown-headed
Crane, Sandhill
Creeper, Brown
Crow, American
Cuckoo, Black-billed
Cuckoo, Yellow-billed
Dickcissel
Dove, Mourning
Duck, American Wigeon
Duck, Blue-winged Teal
Duck, Canvasback
Duck, Gadwall
Duck, Green-winged Teal
Duck, Hooded Merganser
Duck, Mallard
Duck, Northern Pintail
Duck, Northern Shoveler
Duck, Redhead
Duck, Ring-necked
Duck, Ruddy
Duck, Wood
Eagle, Bald
Eastern Wood-pewee
Egret, Cattle
Egret, Great
Finch, House

Flicker, Northern
Flycatcher, Acadian
Flycatcher, Great Crested
Flycatcher, Least
Flycatcher, Willow
Gnatcatcher, Blue-gray
Goldfinch, American
Goose, Canada
Grackle, Common
Grackle, Great-tailed
Grebe, Pied-billed
Grosbeak, Blue
Grosbeak, Rose-breasted
Gull, Ring-billed
Hawk, Broad-winged
Hawk, Cooper's
Hawk, Northern Harrier
Hawk, Red-shouldered
Hawk, Red-tailed
Hawk, Swainson's
Heron, Great Blue
Heron, Green
Heron, Little Blue
Hummingbird, Ruby-throated
Kestrel, American
Killdeer
Kingbird, Eastern
Kingfisher, Belted
Lark, Horned
Martin, Purple
Meadowlark, Eastern
Meadowlark, Western
Mockingbird, Northern
Nighthawk, Common
Night-heron, Black-crowned
Nuthatch, White-breasted
Oriole, Baltimore
Oriole, Orchard
Osprey
Owl, Barred
Owl, Eastern Screech-owl
Owl, Great Horned
Owl, Long-eared
Owl, Short-eared

Partridge, Gray	Vulture, Turkey
Pheasant, Ring-necked	Warbler, American Redstart
Phoebe, Eastern	Warbler, Blue-winged
Pine Siskin	Warbler, Cerulean
Rail, King	Warbler, Common Yellowthroat
Rail, Sora	Warbler, Hooded
Rail, Virginia	Warbler, Kentucky
Robin, American	Warbler, Ovenbird
Sandpiper, Spotted	Warbler, Prothonotary
Sapsucker, Yellow-bellied	Warbler, Worm-eating
Shrike, Loggerhead	Warbler, Yellow
Snipe, Wilson's	Warbler, Yellow-throated
Sparrow, Chipping	Waterthrush, Louisiana
Sparrow, Clay-colored	Waxwing, Cedar
Sparrow, Field	Whip-poor-will
Sparrow, Grasshopper	Woodcock, American
Sparrow, Henslow's	Woodpecker, Downy
Sparrow, House	Woodpecker, Hairy
Sparrow, Lark	Woodpecker, Pileated
Sparrow, Savannah	Woodpecker, Red-bellied
Sparrow, Song	Woodpecker, Red-headed
Sparrow, Swamp	Wren, Carolina
Sparrow, Vesper	Wren, House
Starling, European	Wren, Marsh
Swallow, Bank	Wren, Sedge
Swallow, Barn	Wren, Winter
Swallow, Cliff	**Total Bird Species 154**
Swallow, Northern Rough-winged	
Swallow, Tree	
Swift, Chimney	
Tanager, Scarlet	
Tanager, Summer	
Tern, Black	
Tern, Forster's	
Thrasher, Brown	
Thrush, Veery	
Thrush, Wood	
Towhee, Eastern	
Tufted Titmouse	
Turkey, Wild	
Vireo, Bell's	
Vireo, Red-eyed	
Vireo, Warbling	
Vireo, Yellow-throated	

Red-winged Blackbird
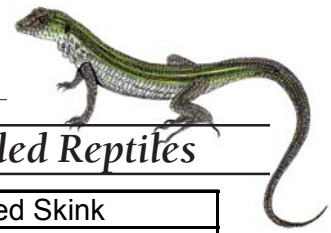
GAP Modeled Mammals

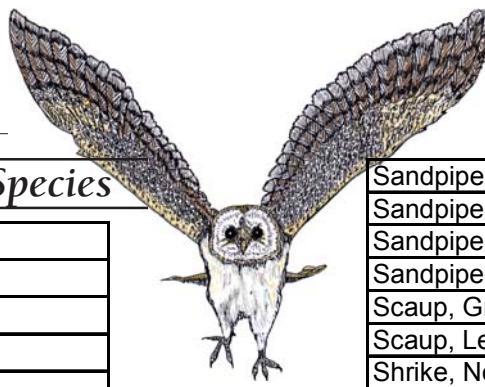| |
|---|
| Badger, American |
| Bat, Big Brown |
| Bat, Little Brown |
| Beaver, American |
| Bobcat |
| Chipmunk, Eastern |
| Coyote |
| Eastern Cottontail |
| Fox, Gray |
| Fox, Red |
| Gopher, Plains Pocket |
| Jackrabbit, White-tailed |
| Mink |
| Mole, Eastern |
| Mouse, Deer |
| Mouse, Meadow Jumping |
| Mouse, Western Harvest |
| Mouse, White-footed |
| Muskrat |
| Opossum, Virginia |
| Otter, River |
| Raccoon |
| Shrew, Elliot's Short-tailed |
| Shrew, Least |
| Shrew, Masked |
| Shrew, Northern Short-tailed |
| Skunk, Striped |
| Squirrel, Eastern Fox |
| Squirrel, Eastern Gray |
| Squirrel, Franklin's Ground |
| Squirrel, Red |
| Squirrel, Thirteen-lined Ground |
| Vole, Meadow |
| Vole, Prairie |
| Vole, Woodland |
| Weasel, Least |
| Weasel, Long-tailed |
| Weasel, Shorttail (Ermine) |
| White-tailed Deer |
| Woodchuck |
| **Total Mammal Species   40** |

GAP Modeled Reptiles

Lizard, Five-lined Skink
Lizard, Northern Prairie Skink
Lizard, Prairie Racerunner
Lizard, Six-lined Racerunner
Snake, Black Rat
Snake, Brown
Snake, Bull
Snake, Eastern Garter
Snake, Eastern Hognose
Snake, Fox
Snake, Milk
Snake, Northern Lined
Snake, Northern Redbelly
Snake, Northern Water
Snake, Plains Garter
Snake, Prairie Kingsnake
Snake, Racer
Snake, Ringneck
Snake, Smooth Earth
Snake, Smooth Green
Snake, Western Ribbon
Turtle, Blanding's
Turtle, Ornate Box
Turtle, Smooth Softshell
Turtle, Snapping
Turtle, Spiny Softshell
Turtle, Western Painted
Total Reptile Species   27

GAP Modeled Amphibians

Frog, Bullfrog
Frog, Cope's Gray Treefrog
Frog, Gray Treefrog
Frog, Green
Frog, Northern Cricket
Frog, Northern Leopard
Frog, Plains Leopard
Frog, Spring Peeper
Frog, Western Chorus
Salamander, Mudpuppy
Salamander, Tiger
Toad, American
Toad, Great Plains
Toad, Woodhouse's
Total Amphibian Species   14

Non-GAP Modeled Species

Avocet, American	Sandpiper, Least
Blackbird, Brewer's	Sandpiper, Solitary
Blackbird, Rusty	Sandpiper, Western
Bunting, Snow	Sandpiper, White-rumped
Crossbill, Red	Scaup, Greater
Dove, Eurasian Collared-dove	Scaup, Lesser
Dove, Rock (Pigeon)	Shrike, Northern
Dove, White-winged	Sparrow, American Tree
Dowitcher, Long-billed	Sparrow, Fox
Dowitcher, Short-billed	Sparrow, Harris's
Duck, Bufflehead	Sparrow, Le Conte's
Duck, Cinnamon Teal	Sparrow, Lincoln's
Duck, Common Goldeneye	Sparrow, White-crowned
Duck, Red-breasted Merganser	Sparrow, White-throated
Eagle, Golden	Swan, Mute
Egret, Snowy	Swan, Trumpeter
Falcon, Peregrine	Swan, Tundra
Finch, Purple	Tern, Caspian
Flycatcher, Alder	Thrush, Gray-cheeked
Flycatcher, Olive-sided	Thrush, Hermit
Flycatcher, Yellow-bellied	Thrush, Swainson's
Golden-plover, American	Thrush, Varied
Goose, Greater White-fronted	Vireo, Blue-headed
Goose, Snow	Vireo, Philadelphia
Goshawk, Northern	Warbler, Bay-breasted
Gull, Franklin's	Warbler, Black-and-white
Gull, Herring	Warbler, Blackburnian
Hawk, Rough-legged	Warbler, Blackpoll
Hawk, Sharp-shinned	Warbler, Black-throated Blue
Ibis, White-faced	Warbler, Black-throated Green
Junco, Dark-eyed	Warbler, Canada
Kinglet, Golden-crowned	Warbler, Cape May
Kinglet, Ruby-crowned	Warbler, Chestnut-sided
Kite, Mississippi	Warbler, Connecticut
Longspur, Lapland	Warbler, Golden-winged
Loon, Common	Warbler, Magnolia
Merganser, Common	Warbler, Mourning
Merlin	Warbler, Nashville
Nuthatch, Red-breasted	Warbler, Orange-crowned
Owl, Barn	Warbler, Palm
Owl, Northern Saw-whet	Warbler, Pine
Owl, Snowy	Warbler, Tennessee
Pelican, American White	Warbler, Wilson's
Plover, Black-bellied	Warbler, Yellow-rumped
Plover, Semipalmated	Waterthrush, Northern
Redpoll, Common	Yellowlegs, Greater
	Yellowlegs, Lesser
	Turtle, Alligator Snapping
	Armadillo, Nine-banded
	Cat, Feral
	Mouse, House
	Rat, Norway
	Shrew, Pygmy
	Total Species 99

Welcome to the Neighborhood

If you have recently picked up the newspaper or watched the local news, you know that Iowans have a new neighbor. Mountain lion reports, auto collisions, and shootings are evidence that these secretive predators have been quietly living among us. Human response to the news runs the spectrum from fear and retaliation to curiosity and amazement. What kind of choices we as Iowans make next will depend on our understanding of these animals as well as our values.

Mountain lions (*Felis concolor*) (also known as cougars, pumas, or panthers) were historically part of Iowa's landscape although never in great abundance. They became extinct from the state (extirpated) in 1867 with the last one being shot in Appanoose County on the Iowa-Missouri border. These are large powerful cats with males weighing between 140 to 160 pounds and females 90 to 110 pounds. They make no special home but simply use rock crevices, hollow logs, or underbrush as shelter.

Their preferred food is deer which they capture by sneaking from behind and then killing with a quick bite to the back of the neck. They will often drag the animal some distance before feeding on it. The remaining carcass is cached by being partially covered in leaves, dirt, and other debris. The cat resides nearby and occasionally returns to feed. Scavengers like coyote, fox, and crow will also feed warily on the remaining deer.

Mountain lions are extremely rare in Iowa although a handful of recent sightings have been documented including two cats killed by cars and two being shot. Most likely some of these are young males who have been forced out of more desirable habitat to find new territory. Iowa is not a very suitable habitat because of the large open areas of agriculture land and major highways. That being said, we do have an immense population of white-tailed deer, large wooded corridors along our rivers, and no predatory competition. If a single cat wandered into Iowa and could stay off the highways and out of the cross-hairs, he would have it made!

How do you know if there is a cat in your area? The best sign is a track. Mountain lion tracks are large, slightly wider than long, with the width of the front feet about 3.5 to 4 inches and hind feet slightly smaller. Second, they have three teardrop shaped lobes on the bottom of the track. Finally, they show no claw marks. Like all cats they have retractable claws, which are only visible in a track when they are accelerating or jumping. Other signs include scratch marks high on trees and cached prey as described above.

What are my chances of being attacked by a mountain lion? *Extremely* slim. Even in areas where there are dense populations, attacks on humans are rare. If you do confront a mountain lion there are some easy steps to keep you and the animal safe:

1) Make yourself appear large; cats are more likely to attack if you are bent over or squatting.
2) Give the cat an escape; mountain lions are not confrontational and will often look for a way out.
3) Never run; scientists think that fleeing triggers the "prey response". People who bike or run have seen this same phenomenon in domestic dogs.
4) Hike with a friend; attacks usually happen when people are by themselves.
5) Finally, keep children close to you; cats tend to be drawn to children.

The fact is mountain lions were never abundant in Iowa and most likely will not make a comeback. Maybe we as Iowans can welcome them back in to the fabric of our landscape and keep our fingers crossed that we might get a glimpse!

Editor's Note: To learn more about tracks of mountain lions and other animals, Paul Rezendes' book "Tracking & the Art of Seeing, How to Read Animal Tracks and Sign, 2nd Ed." has excellent pictures and descriptions.

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Eastern Meadowlark

Thank You NatureMapping Trainers!

We extend a special thank you to each of NatureMapping's regional trainers for volunteering time and talent. While some trainers are still scheduled to conduct workshops next year, each has worked very hard to schedule, promote and conduct Level I training workshops this year, as well as help advocate for our program. If you have received training from any of the trainers, please help us extend a big thank you!

Region 1 (NW)
Sunday Ford, Sioux County Conservation Board

Region 2 (NE)
Darrin Siefken, Bremer County Extension
Stacey Snyder, Tripoli Community School District

Region 3 (SW)
Kay Neumann, SOAR – Diversity Farms

Region 4 (SE)
Brad Freidhof, Johnson County Conservation Board
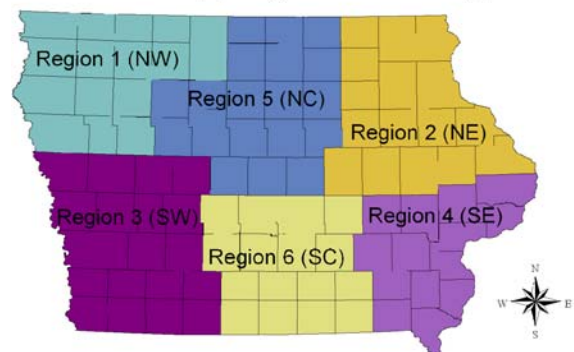
Region 5 (NC)
Laura Elfers, Floyd County Conservation Board

Region 6 (SC)
Laura Zaugg/Chris Adkins, Dallas County Conservation Board

Newsletter Submissions

Your contributions to this newsletter are welcome. If you have monitoring projects you would like to share or are working to improve wildlife habitat, we would love to hear about it. We'll accept your text electronically as a plain text or Word formatted file, email, or as typewritten copy. Photos should be either JPEGS (300 dpi) or actual prints. All submissions are subject to editing, formatting changes, and length. Throughout this newsletter are ways you can contribute. Please send all submissions to the following address:

Iowa NatureMapping
Newsletter Submission
Department of NREM
124 Science II
Iowa State University
Ames, IA 50011-3221
jpobrien@iastate.edu

NatureMapping Trainer Regions

Region 1 (NW)
Region 5 (NC)
Region 2 (NE)
Region 3 (SW)
Region 4 (SE)
Region 6 (SC)

Your Data is Important

Don't forget, your data is important for the continued success of NatureMapping and to your own efforts. If you are having trouble entering data, or need assistance, please let Todd Vens know.

Iowa NatureMapping
Finding All the Pieces to Keep Common Species Common

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Address Service Requested