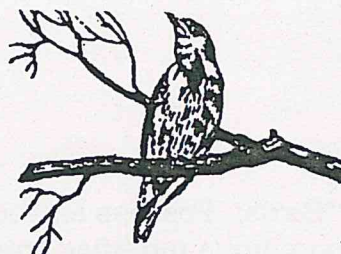


On T.R.A.C.K.S.



Teaching Resource Activities and Conservation to Kansas Students

VOL. 4 NO. 1

KANSAS WILDLIFE & PARKS

FALL 1992

Birds Birds Birds Birds Birds Birds Birds Birds Birds

Birds Birds Birds Birds Birds Birds Birds Birds Birds

Birds Birds Birds Birds Birds Birds Birds Birds Birds



Birds Birds Birds Birds Birds Birds Birds Birds Birds

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Did you know pelicans talked to fish??
Find out what they said on page 8.

Fun facts for feeding fine feathered
friends found on 4 and 5.

Looking for a summer job?? Check December
on page 19.

A WILD newsletter in a newsletter on page 16.

Grants for outdoor school development. The
scoop's on page 7.

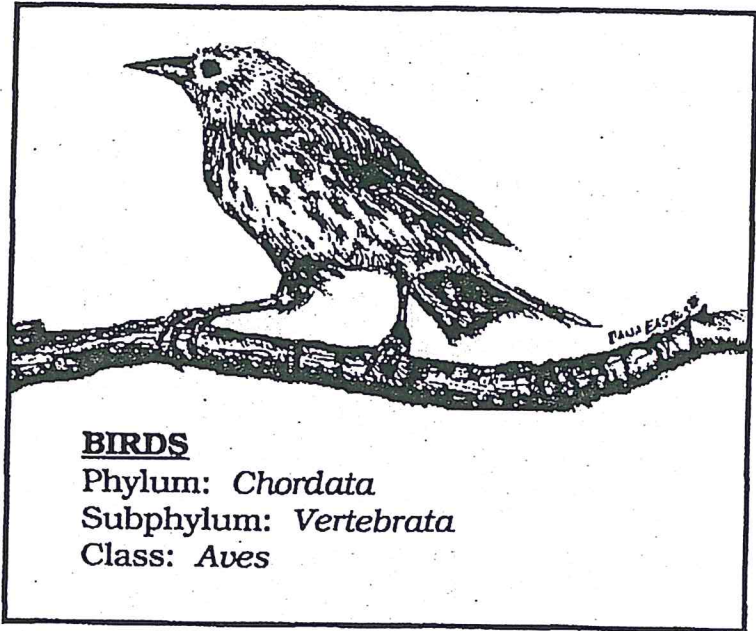
What bird flies the Gulf of Mexico in 20 hours
nonstop? Find the answer on page 3.

Flamingos in Kansas?? Unbelievable...page 2.

The spotlight shines on page 6.

WHAT IS A BIRD??

"Birds: Possess feathers; forelimbs modified into wings, hindlimbs adapted to walking, swimming, or perching; scales present on feet; mandibles with no teeth (in living species); light skeleton with much fusion; four-chambered heart; extensive airsacs throughout body; warm-blooded; no urinary bladder; oviparous; 8700 living species" (*The Life of Birds*, Welty)



BIRDS
 Phylum: *Chordata*
 Subphylum: *Vertebrata*
 Class: *Aves*

Of the approximately 8700 living species of birds, about 750 species occur in North America.

According to *Birds in Kansas, Volume II*, Kansas has 426 species of birds (verified and hypothetical) recorded within its borders. Kansas is home to a wide diversity of birds including prairie chickens, bald eagles, shrikes, cuckoos, cranes, falcons, vultures and burrowing owls. Kansas has even been visited by wild, bright pink flamingos – twice!!

BIRDS OF KANSAS CHECKLIST lists all the birds found in Kansas. Check off the birds as you see them -- your class could keep a list of birds that visit your school habitats.

**KANSAS ORNITHOLOGICAL SOCIETY
CHECK LIST
BIRDS OF KANSAS**

Species	Date	Time	Count	Observer
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HUMMERS

Over 300 species of hummingbirds grace the Earth. Probably no other group of birds gathers more interest than these micro-helicopters. Hummers are known for their spectacular flying ability, especially during courtship flights. They are the only birds that can fly sideways and backwards.

Kansas hummers include the ruby-throated and rufous hummingbird – with very rare appearances by the black-chinned, broadtailed and magnificent hummingbirds. They are our smallest birds – the ruby-throated weighs in at a hefty 4.5 grams and 9 cm long.

Audubon referred to hummingbirds as “glittering fragments of a rainbow”. And their names reflect these brilliant colors: ruby-throated, crimson topaz, red-tailed comet, sapphire-vented puffleg, green-crowned brilliant – to name a few. The gorget, or throat patch, appears to change color as the bird changes direction. Viewed from one angle the feathers may appear black. Turn just a bit and the colors burst forth. The feathers of a hummingbird are covered with oval ‘platelets’. These ‘platelets’ contain dozens of tiny air bubbles. When light bounces at different angles, different colors appear. The color reflected varies with the size of the air bubbles and the thickness of the platelets.

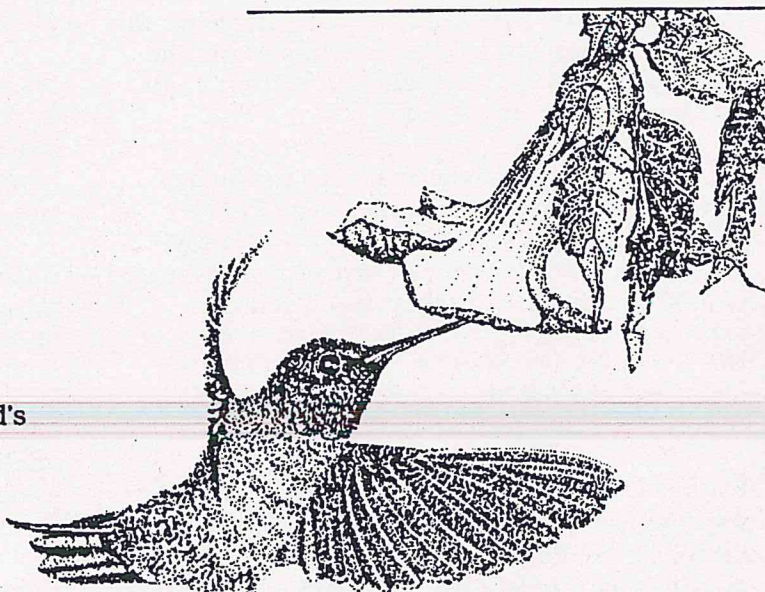
What can you do to attract them to your area?? A combination of plantings and feeders is your best bet. Plant flowers with bright colors and long tubular petals such as honeysuckle, trumpet vine, petunias, salvia, and others. Flowers also provide a place to catch insects – a necessary part of their diet. Feeders filled with sugar water will attract hummers – four parts water to one part sugar. Boil and then cool – red color is unnecessary if your feeder has red parts. Be sure to take down your feeders when the natural food sources are fading, around September.

In Kansas look for hummers mid-April to October. Then they hightail it to the Gulf Coast, Mexico, Panama and the Yucatan. Some even cross the 500 mile wide Gulf of Mexico in about 20 hours – nonstop!!

Such a delight these little fireballs. 🐾

Amazing.....

- * They beat their wings 80 times a second!! Almost 5,000 times a minute. (See how many times your students can flap their arms in a minute!!)
- * Hummers eat every 10 minutes. They visit about 1500 flowers a day.
- * The ruby-throated hummingbird's two eggs are the size of large peas!!
- * To maintain energy overnight, hummers go into temporary hibernation (torpor). Their heartbeat slows from 500 beats per minute during the day to 40 beats per minute overnight.



BIRDING

"By some, it's regarded as a mild paralysis of the central nervous system..." Joseph J. Hickey, *A Guide to Bird Watching*.

Somewhere between paralysis and fanatics racing to and fro with HUGE binoculars checking off bird species with blinding speed, there lies another kind of bird watching. We can watch for the pure enjoyment of it, to discover the quirks of a bird's behavior, even to understand the nature in our own backyards...or something more significant than these simple things. Our watching can be a matter of global importance.

But let's not talk about that now. For those of you who want to give it a try, this is an overview of getting started. To get going with your bird watching, you need to...

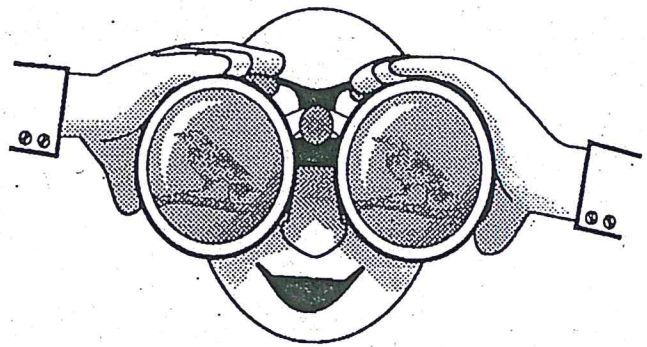
- ✓ have the right equipment
- ✓ know where to find birds
- ✓ know how to watch

As far as equipment goes, setups range from simple to astronomic. Equipment here will mean both field glasses and field guides.

When buying binoculars, notice the two sets of numbers that describe its optical capabilities. One set has this format: 8.5 x 35. The first number in the set tells you the magnification power (in this case 8.5). Aim for glasses in the 7.5-8.5 range to achieve good overall viewing. The second number is the diameter in millimeters of the largest lens. The larger the lens diameter, the more light gathered by the binoculars, and the better your viewing. Lens diameters from 35 to 50 mm are good for birding.

The second set of numbers defines the field of view provided by the binoculars. The format varies; a number like 350 ft/1,000 yards says your field of view is 350 feet across at a distance of 1,000 yards. The number may also be expressed as degrees: 7°/1,000 yards means you can see seven degrees of a circle at 1,000 yards distance. Look for binoculars with a field of view of over 7° (or 350 feet) at 1,000 yards.

For a field guide, your choice will depend on the way you like information presented. For identification, do you prefer the clarity of colored drawings, or the detailed realism of photographs? Check out a few different guides before buying. Look for a guide providing visual, range, habitat, behavioral, and life cycle information. Bird descriptions should include male and female



differences and seasonal and age-based changes in appearance. Added pluses are silhouette and in-flight guides. With equipment in hand, it's time to go find birds.

Your choices are simple: go to the birds, or bring the birds to you. The excitement in going out into the field to spot birds comes from the unexpected; who knows what you'll see as you move through the variety of habitats in Kansas? Using your field guide as an atlas, you can plan theme trips to see different kinds of birds: wetlands and lakes for shorebirds and waterfowl, woods for cavity-dwellers, or prairies for soaring raptors.

Kansas Wildlife and Parks manages quite a few areas with a diversity of habitats, from the famed Cheyenne Bottoms wetland to the woods of Clinton to the prairies of Wilson. A few parks maintain a list of birds found in the area.

Some people aren't quite ready to go tromping around looking for birds, though. For these folks, it's best to start small and practice making identifications before heading out. What better place to start than your own back yard?

People see birds every day. The problem is, birds tend to move around quite a bit, and are hard to study. Adding a few things to your yard attracts more birds, and keeps them still long enough for you to get a good look.

A feeder - whether it contains sunflower seed, mixed seed, or suet - should be placed near trees or shrubs to provide birds with cover. Different kinds of birds are attracted by different mixes of feed. Bird feeder books abound with helpful hints on attracting specific groups of birds. Adding a bird bath or other water source to your feeding ground will attract still more birds - and provide another set of behaviors to observe.

Houses - from simple single dwellings to purple martin condos - give you a chance to get close to more of the bird's life cycle...nest building, mating, breeding, early growth. Books can provide critical information on construction,

placement, and maintenance of bird houses. Be sure to invest a little time in getting good information. An improperly constructed house can be deadly to birds.

Plantings - shrubs, trees, and grasses - are feeder and house all in one. In creating an enduring habitat in your yard, you provide a natural food source, nesting materials, and cover from weather and predators. Plantings are a good way to observe birds in something approaching their natural habitat. You can obtain information on good plant species for backyard planting from your local Wildlife and Parks wildlife biologist and other sources.

Let's assume you've set yourself up to see some birds. Seated comfortably? A good view of the feeder or tree? Okay. Here it comes. ZOOM! Pause. Chomp, chomp. ZOOM! What was that?

Bird identification is your next task. It takes practice and patience, and a lot of birds will flit by before you're adept at tagging a name onto them. Some hints to make things go more smoothly:

- ✓ study common local birds in your field guide.
- ✓ don't rush for the field guide right off the bat; watch the bird carefully when you **first** see it; what size is it (sparrow-like, robin-like, etc.)? What are the most eye-catching colors? Does it have a long bill or short? Are there unusual tail or head feathers?
- ✓ make a good picture in your head of the bird, **then** go to your field guide to nail the identification.

Patience!! *Doing* is the best way to get in the bird ID groove.

You don't need to see the bird to identify or enjoy it. Sometimes you only catch a fleeting glimpse of a tail. Or perhaps you don't see very well. Birds have very distinct voices. Even the same species will sound different (have different dialects) in different parts of the country. By learning bird songs you identify birds by the sounds they make. Audio cassettes can help you learn bird songs. You can even distinguish between species of woodpeckers by the 'drumming' or 'hammering' they make as they beat on trees looking for their insect lunch.

Identifying species need not be the end product of your bird watching. There is a virtually unexplored world of behavior to tap. How birds interact with their own and other species. How

they feed and select a mate. How they react to danger. Keep notes on your observations. These can vary from written or taped comments, photographs, or even video. Regardless of the method, patterns in behavior begin to unfold when you look back over your compiled observations.

Watching birds can be more than a superficial passing of the time. It can even mean more than the relationship you build with the creatures with whom you share your neighborhood. There are globally important reasons to have this kind of fun...there's the tropical connection. Many of our songbirds are Neotropical migrants; they winter south of the border. **And their numbers are dropping.** Why? Don't know. **How much have they dropped?** Don't know. **Which species?** Don't know. Get the picture?

As a classroom project, birds represent an awesome chance. Try it: keep a bird watching program as an ongoing project with students making observations, drawing conclusions, and doing research...then pass the ball to next year's group. Topics can range from simple population trends to making links to tropical deforestation to the effects of changes in the weather.

All this from a little well-planned paralysis. 🐾

PREFERRED FOODS

Black-oil Sunflower Seed

black-capped chickadee, tufted titmouse, cardinal, blue jay, rufous-sided towhee, downy woodpecker, grosbeak, mourning dove, finches

Proso millet

junco, white-throated sparrow, fox sparrow, song sparrow, tree sparrow

Suet/Peanut butter

nuthatches, kinglets, brown creeper, blue jay, tufted titmouse, flicker, all woodpeckers

Fruit

thrashers, robin, catbird, bluebird, cedar waxwing, mockingbird, finches, pine siskin and downy, hairy and red-headed woodpeckers

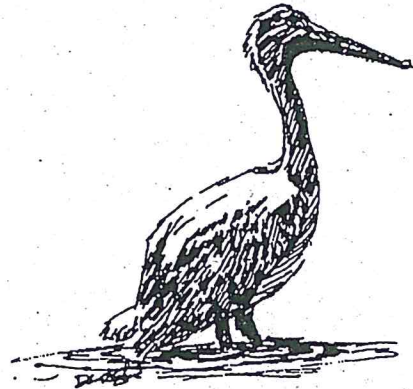
SPECIES SPOTLIGHT: THE AMERICAN WHITE PELICAN

The American White Pelican is truly an amazing bird. With its nine and a half foot wingspan and weighing between 10 and 17 pounds, it is one of the largest birds in North America. Only the California condor with its 10' wingspan is larger.

Though it appears awkward on land with its enormous bill, webbed feet, and oddly proportioned body, the white pelican is a graceful and beautiful flyer, soaring high in the sky. In flight, its head is folded back on its shoulders with the neck crooked in an "s" shape. Only in flight can the striking black wingtips be seen. Flying behind one leader in a long, wavering line, a flock of pelicans perform in unison, each shifting its flight at the same point as if to avoid some invisible obstacle.

There are seven species of pelicans found in the world. The American white pelican is one of the shyest. In medieval times, the pelican was regarded as a symbol of charity and selflessness. Legend tells of the pelican that had no food for her young so she pricked her own breast and selflessly fed her blood to her chicks. In modern times, Dixon Lanier Merritt wrote:

A wonderful bird is the pelican
His mouth can hold more than his belly can
He can hold in his beak
Enough food for a week
But I'll be darned if I know how the heck he can.



Many people misunderstand the pelican's beak. The pouch, or more correctly the gular pouch, is a flexible bag below the bill. It is salmon or orangish in color and is a unique food-gathering device. It is **not** used, however, for storing or transporting food and is **not** expanded at any other time except for food gathering. The pouch expands both lengthwise and sideways and functions in the same manner as a dip net. In one scoop a pelican's pouch can expand to hold three gallons of water! The water drains out the sides as the pelican tips up its head to swallow the real catch, a fish.

Pelicans eat an average of three to four pounds of fish a day. Rough fish such as gizzard shad, carp, chubs, and buffalo make up the bulk of their diet. Occasionally, pelicans will eat tadpoles, larval salamanders, and crayfish. These social birds will cooperatively fish. Swimming in a line, they encircle a school of fish and drive them towards the shallows. The fish then become an easy meal. There is even a record of pelicans keeping a blind member of a flock alive in this manner.

The white pelican does not dive for fish like its smaller cousin the brown pelican. Their habitats differ, too. The white pelican prefers fresh water and inland lakes; the brown pelican inhabits saltwater coastal areas.

These magnificent birds grace Kansas during their spring and fall migrations. Look for white pelicans at Cheyenne Bottoms, Marais des Cygnes and many of the large reservoirs such as Milford. They arrive sometime in late September and may stay until the middle of November before they move to wintering grounds around the Gulf of Mexico. They return in April for a few weeks before moving on to their nesting sites in Canada and the northern United States.

White pelicans prefer to nest on islands in the middle of large lakes. Some major nesting areas in this country include Anaho Island in Pyramid Lake, Nevada (an area threatened with water loss from development), the Great Salt Lake, Chase Lake in North Dakota, and Bowdoin and Medicine Lake in Montana.

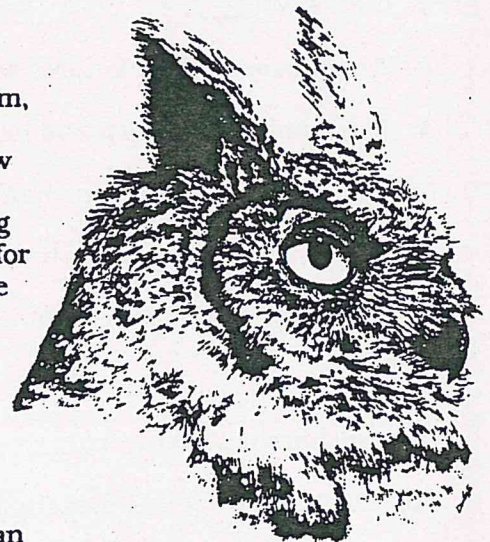
Pelicans may fly hundreds of miles round trip to bring food to their one or two young. They feed their chicks by regurgitation. A hungry chick inserts its bill into the throat of the parent to obtain the partially digested meal. When they reach a month of age, the young gather in groups called pods. They take their first flight at the age of two months.

In recent years, pelicans have been seen year round in some places in Kansas. These birds seen during the summer are thought to be non-breeding birds. A pelican becomes sexually mature around the age of three. Breeding birds develop a large horny growth on the center of the top of the bill. It is found on both males and females and will drop off after incubation begins.

There are few sights as magnificent as a flock of pelicans soaring high in the sky, their sleek white feathers glistening in the sun. Spend some time around many of our Kansas lakes this fall and you, too, will be enthralled by this spectacular sight. 🐾

O.W.L.S.

It's official. O.W.L.S., the Outdoor Wildlife Learning Sites program, is off and running. This brand new program crept along in first gear trying to make sure all the pieces worked properly. And now it's ready to fly. Initiated in 1990 with the start-up of two pilot sites, O.W.L.S. is an effort to help schools create outdoor learning laboratories. The Chickadee Checkoff is providing up to \$2,000 for an O.W.L.S. A total of 20 O.W.L.S. are planned per year for a five year period - the objective is to have 100 O.W.L.S. in Kansas by 1995.



To date there have been eight O.W.L.S. areas initiated. These included sites in McClouth, Baxter Springs, Onaga, Valley Falls, Gossel, Olathe, Mound City and Wakeeney. At least another 17 sites will be approved this year. Any school is eligible to receive an O.W.L.S. grant. O.W.L.S. will emphasize those schools where O.W.L.S. committees have been set up, maintenance commitments are evident and where native plants and wetlands are incorporated as features. Other sites that may have room for only a few shrubs, trees and native grasses will also be considered. Dr. George Potts of Friends University in Wichita is coordinating O.W.L.S. efforts for the Department. Dr. Potts has a background in education and the development of outdoor learning laboratories. He is working with Wildlife & Parks biologists and educators across the state in helping to make O.W.L.S. a model program for the nation.

If you or your school may be interested in O.W.L.S., please contact Dr. Potts at 2040 N. Kessler, Wichita, KS, 67203 or Ken Brunson, Wildlife & Parks, RR2, Box 54A, Pratt, KS 67124. There is a waiting list for O.W.L.S. but you should not be deterred from getting an application in for later consideration. The process involves these steps:

1. Send in an application
2. Approved applications receive O.W.L.S. guidelines and a sample proposal
3. Wildlife & Parks District Biologist contact the applicant
4. If the proposal is approved, a grant or a place on a waiting list is awarded
5. The O.W.L.S. development begins 🐾

BREAK THE SECRET CODE

What did the pelican say to the fish?

1 2 3 4 5 6 7 8 9

10 11 12 13 14 15 16 17 18 19 ^Y ^{!!}

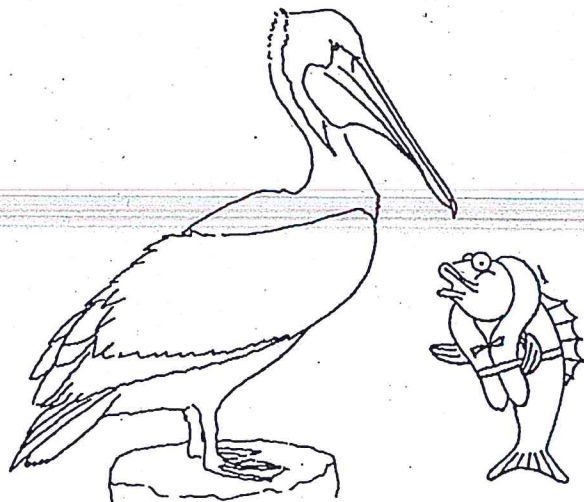
CLUES

1. $1/4$ of 100 = ____
2. $5 + 5 + 5 =$ ____
3. The number of days in three weeks: ____
4. The number of wings found between **nine** pelicans: ____
5. Number of fingers on one hand: ____
6. Single-digit number that rhymes with "fun": ____
7. Number of objects in a dozen: ____
8. Same as #7
9. Christmas is December ____
10. Single-digit number that rhymes with "mix": ____
11. $4 + 5 =$ ____
12. Two more than the number of fingers on both hands: ____
13. Same as #12
14. The number of objects in a baker's dozen: ____
15. **FREEBIE**
16. The number of feet on a pelican: ____
17. Single-digit number that rhymes with "line": ____
18. $3 + 4 + 5 =$ ____
19. Same as # 18.

ALPHABET LIST

1 = A	14 = N
2 = B	15 = O
3 = C	16 = P
4 = D	17 = Q
5 = E	18 = R
6 = F	19 = S
7 = G	20 = T
8 = H	21 = U
9 = I	22 = V
10 = J	23 = W
11 = K	24 = X
12 = L	25 = Y
13 = M	26 = Z

Directions: Take the answer from a clue and using the alphabet list, find the corresponding letter. Put this letter in the blank (same number as the clue). For example, the answer to Clue number 1 is 25. This corresponds to the letter "Y". Put a "Y" in blank number 1.



GREENER PASTURES

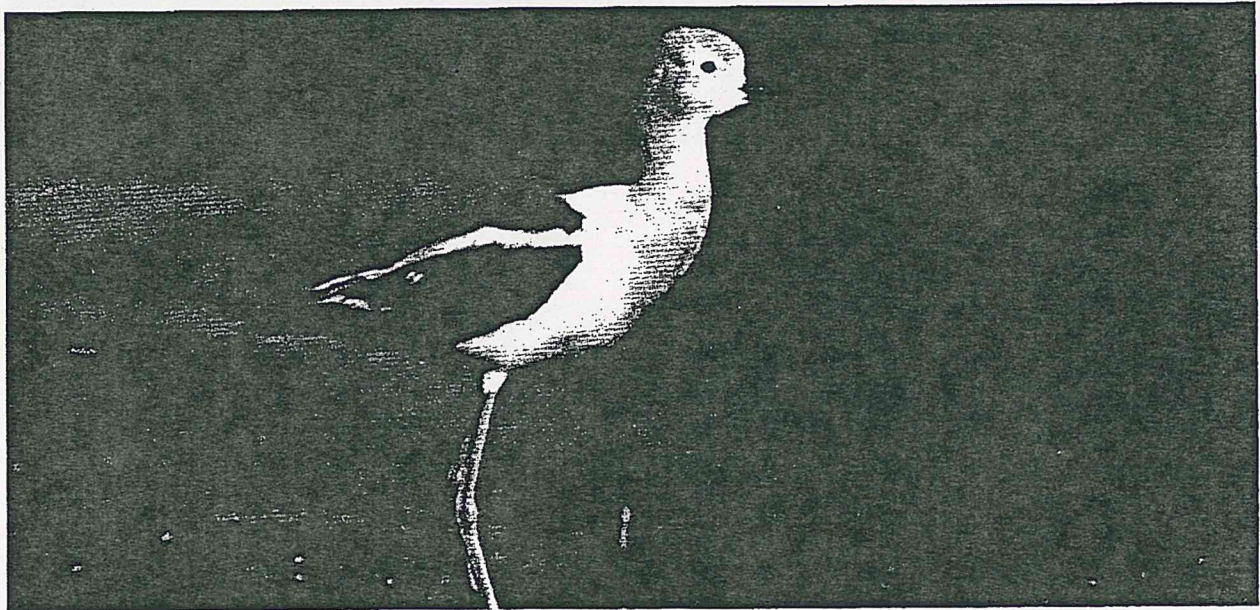
One way birds cope with the stress of winter is to remove themselves from the area. We call this movement "migration".

What triggers these migratory movements? It could be the onset of cold weather, a decrease in the available food and water supplies, changes in the length of sun hours or inborn internal clocks.

Birds actually prepare themselves for this migratory movement. Because of the amount of energy required and the infrequency of feeding on the journey, many store reserved energy through an increase in their fat layers. Some birds also undergo a summer molt which replaces the main flight feathers.

HOW FAR DO THEY GO?? (One Way)

Arctic Tern	12,500 miles
Golden Plover	8,000 miles
Blackpoll Warbler	5,600 miles
Swallow	5,500 miles
Ruby-throated Hummingbird	1,500 miles
Peregrine Falcon	1,000 miles



How do birds, especially those who travel long distances, find their way? It appears they utilize a number of methods. Many use guiding points in the sky, such as the stars, the sun and moon. Others follow landscape features like rivers, coastlines and mountains. Evidence indicates the earth's magnetic field aids some migratory birds.

Some birds can travel 200-300 miles per day, but most average 50-60 miles. The Arctic tern holds the record for the greatest distance travelled during migration - a round trip of about 25,000 miles. It would take you over 400 hours, at 60 m.p.h., to drive this distance.

One of the most important migration stop points for shorebirds in North America and perhaps in the western hemisphere is located right here in Kansas - Cheyenne Bottoms. A recent survey discovered 45% of the entire northward migrating population of North American shorebirds utilize the Bottoms as a stopover site. The Bottoms provides a critical stopping point for the endangered whooping crane.

The autumn sky is graced with migratory birds. Take time to look skyward and remember the birds have their work cut out for them, but with a little luck they will be back again come spring. 🐾

SHOOTING BIRDS

You creep slowly toward your target. You step on a stone and jerk forward violently, then freeze...sure your prey has been warned and taken flight. No; there it sits. You continue forward, ignoring the runnel of sweat tracing its course down your back. Finally, you're close enough. You aim, breath deeply, and SHOOT. Darn, forgot the flash. Of course, the loud CLICK did what your stumblings did not...scared the bird away. Your first chance to get a good picture of an indigo bunting has come and gone.

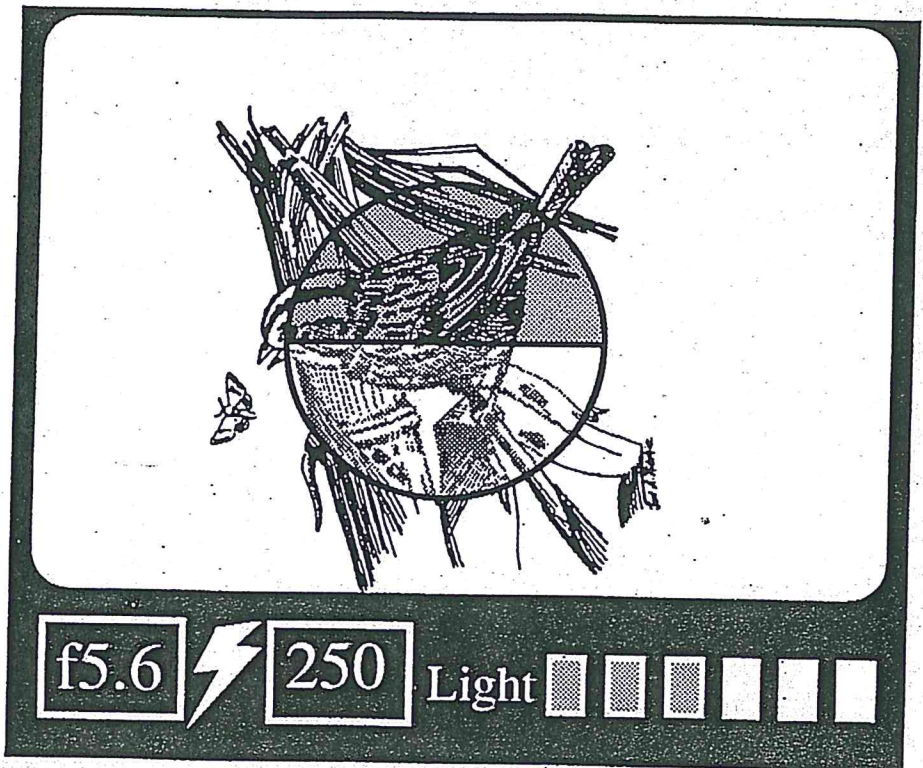
Birds are at best, well...flighty. Hard to shoot.

Here are some tips from Arnold Wilson's book *Creative Techniques in Nature Photography* to help you get the pictures you want from your birdwatching...

Basic equipment

Most people will use a 35mm SLR camera. This kind of camera provides a true view of the target through the eyepiece, but has a relatively loud shutter release - off goes your bird. Some of the noise comes from the mirror in the camera giving you that true-to-life view - it has to be raised out of the way when you snap the picture, then dropped back into place. If your camera allows you to lock the mirror in the upright position, you may be able to pre-focus the camera on a given spot (the feeder or favorite perch), lock the mirror up, and snap away with less noise. Mating an electronic flash unit to your camera setup will give you more control over the appearance of the image.

Lenses come next. A 135mm telephoto lens will provide good overall flexibility, but there will undoubtedly be times when you need to fill more of the frame with the subject. A 300mm lens will give you a six-fold increase in magnification over a standard 50mm lens.



When using such long focal length lenses, another problem arises: shaking.

Steadying your camera is especially important at the lower shutter speeds. A tripod, monopod, or shoulder support will give you the stability you need. A shoulder support resembles a rifle stock with a mounting plate for your camera. The trigger is cabled to the shutter release on your camera. If outdoor photography was compared to hunting before, just wait till you're seen stalking a red-winged blackbird with a rifle stock snugged up against your shoulder.

Basic Birds

Birds can see and hear you. (But most birds can't smell you.) By studying the bird's head, you can guess as to its field of view: an upland bird such as a pheasant has eyes on either side of its head, giving it a wide field of view for protection. Birds of prey tend to have forward facing eyes to better see food, but have flexible necks allowing them to scan large areas. This is what you're up against.

Hunting Birds

In your backyard, try setting up a feeding area near natural perches (giving you the flexibility to produce a picture free from artificial structures). A blind of some sort may be necessary to get close, and nearly any tarp or canvas will work. For many, the best blind may already be in place: your house.

With a clean, screen-free window, a strategically placed feeder, you're set. Careful, though...don't let the camera touch the window. The sound of releasing the shutter will be transmitted and **amplified** by the glass. Good-bye, birds.

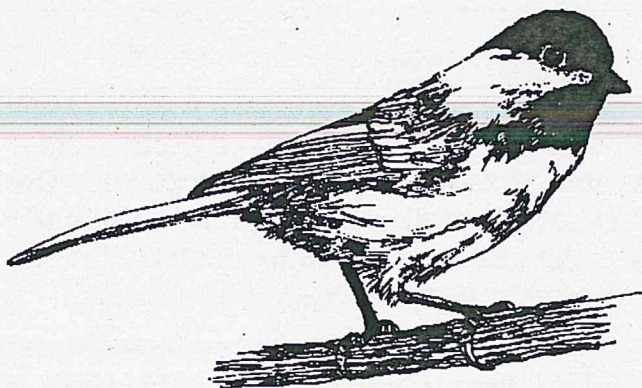
In the field, you need to put yourself in the right place at the right time. Again, get to know your subject...

- ✓ nesting habits
- ✓ feeding habits
- ✓ habitat
- ✓ take-off, landing, flight characteristics

With the right information in your head, you can choose from two basic approaches - wait-and-see, and stalking.

With the wait-and-see method, you merely take what you know about the bird - say, where it feeds - set up in a comfortable spot, and wait. Since you're not controlling your distance from the subject, a telephoto or zoom lens becomes essential. In stalking, you make full use of your birding knowledge. You have a target, and are maneuvering to achieve the shot of your dreams. Your movements are the ultimate expression of caution, and the hunt is on.

Good luck! 🐾



TRIVIA!!

1. Name the Kansas State Bird.
2. Only 1/3 of all North American birds migrate. True or False.
3. Name three things that enable a bird to fly.
4. What are two things birds might use to help them find their way during migration.
5. Name an endangered bird that occurs in Kansas.
6. What functions do feathers serve?
7. When and where did flamingos visit Kansas?
8. How many gallons of water can an adult white pelican's beak hold?
9. What is the process called when a bird loses feathers?
10. Name the type of feather which lacks hooks and is very soft and fluffy.
11. Do swifts fly in their sleep?
12. What is the largest bird in the world?
13. How many chambers does a bird's heart have?
14. Owls can hunt in total darkness. True or False.
15. Feathers are colored by the food that a bird eats. True or False.
16. These birds carried messages during World War II.

(Answers on page 18)

SCAVENGERS

Nature centers, zoos and museums use scavenger hunts to increase learning and to make it fun. Birds provide many opportunities for using this particular activity. Some options:

1. Make a list of 'bird' items students need to find in and around the school yard. For example:
 - a. the word 'bird' in a book - list title, page and line number
 - b. a drawing of a bird from a 1st Grader (or other school member)
 - c. the name of the Principal's (or Librarian's, etc.) favorite bird
 - d. a school in your district with a mascot named for a bird (i.e. the Falcons)
 - e. a picture of the state bird, the western meadowlark
 - f. bring in something a bird might eat
 - g. the name of the state bird from the state where the Principal (or other teacher, etc.) was born
 - h. name of a bird made from the letters in your school's name (i.e. Falcon from Fairborn School, Pelican from Prairie Elementary School)

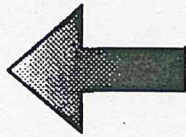
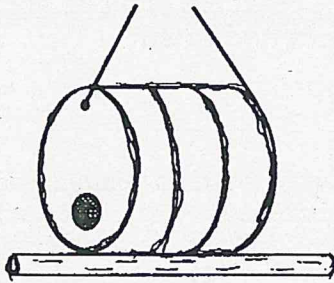
2. Have them "Fly Through a Bird I.D. Guide". Good activity for a rainy day. Have them check-out or borrow a field identification bird guide. *Birds of North America*, *The Audubon Society Bird Field Guide*, and the *Birds in Kansas Volumes I & II*, are just three of several good guides. You can look for interesting facts and statements and then develop a challenging "flight". For example:
 - a. list the size of a specific hummingbird's egg
 - b. where does the white-crowned sparrow spend the winter
 - c. find out how many of a certain kind of bird it would take to equal the student's weight or height
 - d. the number of different kinds of warblers, compare it to the number of eagles, and the number of plovers (make a graph)
 - e. the author of the book, library number, etc.
 - f. the page number where the ruddy duck is found on
 - g. the bird with the longest name
 - h. a bird that changes color

IMPORTANT REMINDER

** It is against state and federal law to possess wild birds or their parts - including feathers, nests, eggs, etc. - this includes most birds with the exception of game birds (i.e. pheasants, quail, ducks etc.) and house sparrows, pigeons and starlings. All other birds are protected. Do not encourage students to pick up feathers, nests or eggs of cardinals, bluejays and other birds.

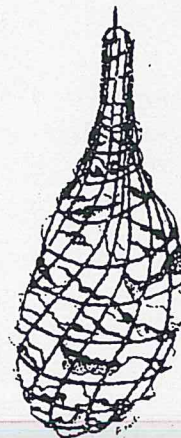
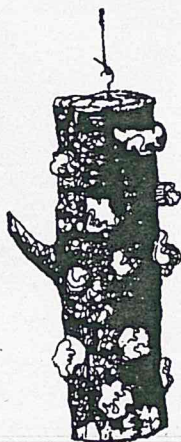
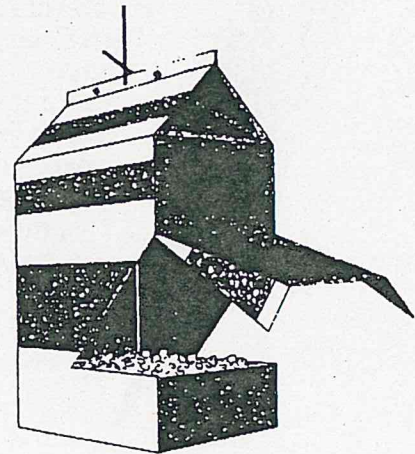
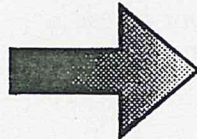
GARBAGE.....IT'S FOR THE BIRDS

A great project for the classroom – build a birdfeeder!! And with all the recent emphasis on recycling, make one from household trash. These ideas aren't new – the following designs appeared in *Ranger Rick* magazine.... in 1976!! Try them out!!



Coffee can feeders can be made to give smaller birds an opportunity to feed without competition from their larger cousins. Cut the bottom of the can out – so both ends are gone. On two plastic coffee can lids trace a 50 cent piece and cut out. Put the lids on the can and punch holes for a coat hanger, or other kind of wire, to hang the feeder. You can wire a perch to the bottom of the can to help the birds find the seed.

Take a half-gallon milk carton (paper) and cut out an opening. Hold the roof up with a straightened paper clip or piece of wire. Make small holes in the bottom to let water drain. You can also use a plastic gallon milk jug. Cut openings on both sides and place a perch through one corner. Don't forget drainage holes. Fill with seed and hang from a tree.



Suet is a highly desired food. It can be presented in many different ways. One of the simplest feeders uses a potato hang. That's it. Suet can also be placed in pine cones or in holes on a log and then hung from a tree. You can also melt the suet down and mix it with bird seed, oatmeal or cornmeal. The black bottom of a 2-liter beverage container makes a good suet holder. Just pull the black bottom off and put wire through the holes. Carefully pour the melted suet in it and when the mixtures hardens, attach it to a tree. 🐾

presented in many different ways. or onion bag. Fill with suet and in pine cones or in holes on a log and then hung from a tree. You can also melt the suet down and mix it with bird seed, oatmeal or cornmeal. The black bottom of a 2-liter beverage container makes a good suet holder. Just pull the black bottom off and put wire through the holes. Carefully pour the melted suet in it and when the mixtures hardens, attach it to a tree. 🐾

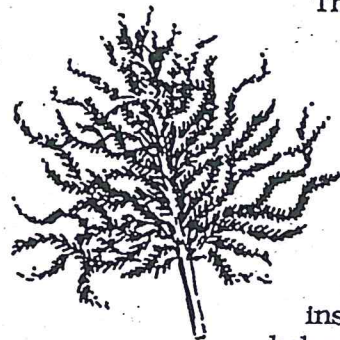
FACTS ABOUT FEATHERS

Unique to birds, feathers serve many purposes. Feathers are made of a protein called keratin – the same material found in our fingernails. Once a feather is formed it does not have any living cells. Feathers provide warmth, aid in flight and help announce a bird's presence – useful in attracting a mate or defending a territory. Birds may shed their feathers once or more a year in a process called molting. And some birds have thousands of feathers. A hummingbird may have 1,000 or more; a swan has over 25,000!! Feathers come in six major types – vane or contour, down, semiplume, filoplume, powder down and bristles.



Contour or vane feathers have barbs which come off the shaft in parallel rows. Barbules grow off each of the barbs and they lock together as hooks and catches. This helps form a flat, singular surface which is especially important for flight. A single barb in a crane feather has about 600 barbules or well over a million for the entire feather!! A bird needs contour feathers for flight and to provide a streamlined body.

Down feathers – familiar to us because they can be found in pillows and comforters.

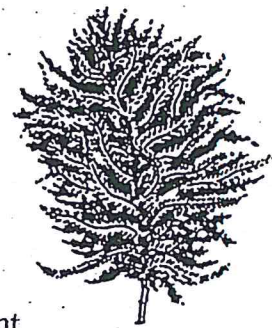


Their barbules lack hooks which makes them look very soft and fluffy. These short, fluffy feathers are hidden under the contour feathers. Here they trap air and provide insulation. Down helps to conserve heat in a bird's body.

Filoplumes resemble hair-like growths with sparse barbs and barbules at the tips. They are found between the feathers on a bird's body. These feathers help a bird to detect the position of its feathers.



Semiplume feathers look like a cross between a contour and a down feather. They have barbs arranged in two rows like a contour feather but they lack hooks and therefore look loose and fluffy. Semiplumes insulate the body, provide flexibility for movement of the larger contour feathers and increase buoyancy in water birds.



Powder down feathers are unique because they never stop growing and are never molted. The barbs at the tips disintegrate into a fine, talc-like powder. This down gives birds a metallic luster. Egrets, herons and some other birds use powder down to help waterproof and preserve their feathers.

Bristles are modified, vaneless contour feathers. On some birds they occur around the eyes as protective eyelashes. They also keep out dust around the nostrils. And they aid some birds by forming an 'insect-net' around their beaks which helps them funnel prey into their mouths. 🐾

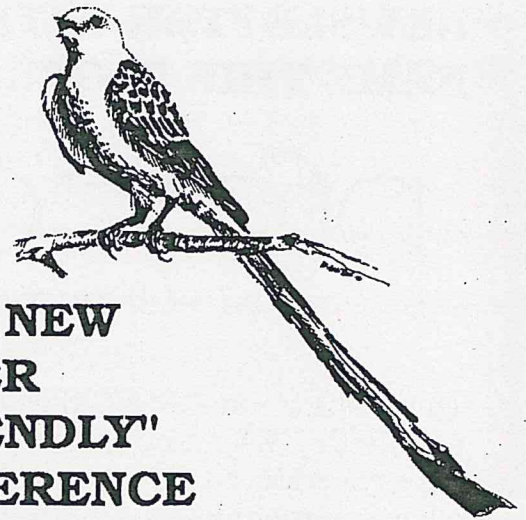
NEW AND IMPROVED

In this day and age "new and improved" often does not create a great deal of excitement. Well, those days are over. The "new and improved" Nature's Notebook is exciting, more "user friendly" and colorful; how does Fiesta Pink and Starlight Blue grab you? The excitement starts with twelve new selections from the *Kansas Wildlife & Parks* magazine education section. "User friendly" translates into being provided with a table of contents and two cross reference sections; one by curriculum areas and the other by special topics. The content areas can also be identified by sight, for each has its own colored section, and we do mean colorful!!

How can your school obtain this "new and improved" Nature's Notebook? No coupons or "I like Nature's Notebook because. . ." are required. Just send your request to Wildlife Education Service, RR 2, Box 54A, Pratt, KS 67124. Please state if you have the three-ring binder which housed the old Nature's Notebook. Don't miss exploring nature and discovering more about wildlife. It's so easy with the new Nature's Notebook. 🐾

CHECK IT OUT. . . .

The Reference Center has over **140** different materials just on birds!! Check out the ornithology craft set (LK-42) or the neat video on backyard birds (VT- 123). Be sure to request your copy of the new catalog so you can order bird materials.



THE NEW "USER FRIENDLY" REFERENCE CENTER CATALOG

The format of the new Reference Center catalog should allow you to locate and select materials with greater ease. The Reference Center educational materials have been arranged under 20 topic headings - each containing all the related resources for that topic. Need materials on birds?? All materials on 'birds', for example, will be found together, divided by media type. The catalog will also be housed in a three-ring binder to allow for the addition or deletions of revised listings. Hopefully the catalog will be available by November 1992. Schools may request their copy of the new catalog by writing to: KS Dept. of Wildlife & Parks, Wildlife Education Service, RR2 Box 54A, Pratt, KS 67124.

The new catalog also contains the descriptions for \$19,000 of newly purchased resource materials. Many new videos and computer programs, covering a wide range of subject areas related to wildlife, were included in this purchase.

The Satellite Reference Center in Lenexa, KS, will also have a new catalog. New materials have been purchased for this center, too. If you would like a new catalog, please write to Mary Kay Crall, KS Wildlife & Parks, 9539 Alden, Lenexa, KS 66215. 🐾

NEWSLETTER WITHIN A NEWSLETTER NAME THIS PAGE....

project WILD

from awareness to responsible actions



This issue of On T.R.A.C.K.S. contains the first Project WILD newsletter. Why a newsletter?? To keep in touch with all who have experienced a Project WILD or Aquatic workshop. And too allow you the opportunity to let others know what success you have experienced through Project WILD. The newsletter can be a great vehicle to assist all of us in becoming more environmentally aware and to assist others in being more appreciative of their environment. We encourage you to share your ideas, opinions and reflections.

This is **your** newsletter. It will not be as meaningful, and may not survive, if we do not receive input from you. We welcome your comments!! We need a name for this newsletter (the winner will receive a *Natural Kansas* book). Send your comments or name suggestions to: Roland Stein, Project WILD Program Director, Kansas Wildlife & Parks, RR2 Box 54A, Pratt, KS 67124.

It's a WILD World!!

Project WILD is international - Canada, Iceland, India and Sweden already use the program. The most recent sponsor of Project WILD is Czechoslovakia. Puerto Rico presently uses Project Aquatic, Saudi Arabia is interested in sponsorship and Mexico is seeking assistance in becoming WILD.

What would the world's attitude be regarding our planet Earth and its life giving resources if every nation was WILD?? It sure would be a better place for us to care and share our habitats with other life forms.

The goal of Project WILD is to assist learners of any age in developing awareness, knowledge, skills and commitment to result in informed decisions, responsible behavior, and constructive actions concerning wildlife and the environment upon which all life depends.

Project WILD - Kansas 1991-92

What a first year; the acceptance and growth of the program has been phenomenal. As the statewide program enters its second year consider the following: since September 1, 1991 forty Project WILD and Aquatic workshops, attended by 835 participants, have been conducted throughout the state and 64 facilitators have been trained in Project WILD and eight in Project Aquatic. I can hardly wait to see what our second year will bring.

A special "**thanks**" must be given to the many individuals who contributed to the success of the program. Without these volunteers and their dedication the growth we have experienced would never have happened. We appreciate their interest in Project WILD and Project Aquatic and their willingness to share this special commitment with others. Thanks.

New Resource

Jan Lewis-Walters and Lyne Hamilton's new book, *Integrating Environmental Education into the Curriculum — Painlessly*, provides educators with proven exercises and activities that bring an environmental awareness into the classroom. They separate activities into primary and advanced. Necessary materials for the lessons are obtainable, everyday items. The book provides a list of environmental organizations and other resources. The activities encourage students to realize they can make a difference.

How Many Coyotes in Kansas

HOW MANY BEARS CAN LIVE IN THIS FOREST?

Objectives Students will be able to: 1) Define a major component of habitat; and 2) identify a limiting factor.

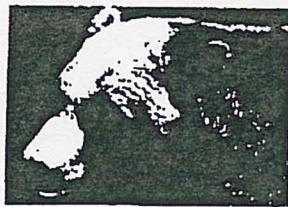
Method Students become "bears" to look for one or more components of habitat during this physically-involving activity.

Background It is recommended that this activity be preceded by one or more activities on adaptation; basic survival needs; components of habitat; crowding; carrying capacity; habitat loss; habitat improvement; herbivores, carnivores, and omnivores; and limiting factors. See the cross references for suggestions. For additional information about black bears, see "Beary Born."

In this activity, black bears are the focus in order to illustrate the importance of suitable habitat for wildlife. One or more components of habitat—food, water, shelter, and space in a suitable arrangement—are emphasized as one way to convey the concept of "limiting factors."

Black bear habitat limits black bear populations, especially through the influences of shelter, food supply, and the social tolerances or territoriality of the animal. Shelter or cover is a prime factor. Black bears need cover—for feeding, hiding, bedding, traveling, raising cubs, and for denning. With limits of space, adult bears will kill young bears or run them out of the area. These young bears must keep moving around either until they die or find an area vacated by the death of an adult.

When food supplies are reduced by factors such as climatic fluctuations, competition becomes more intense. Some adult bears might temporarily move to seldom-used areas of their home range, sometimes many miles away. They must live on what food is available in the area. These



Individuals may become thin and in poor condition for winter hibernation or, in the case of young bears, be forced from the area by more aggressive adults.

All components of habitat are important. Food, water, shelter, and space must not only be available—but must be available in an arrangement suitable to meet the animals' needs. For black bears, shelter is especially important.

All possible conditions are not covered by the design of the activity. However, by this simple illustration, it is possible for students quickly to grasp the essential nature of the concept of limiting factors.

Age: Grades 3-9 (and older)
Subjects: Science, Social Studies, Mathematics, Physical Education

Skills: analysis, computation, discussion, evaluation, generalization, kinesthetic concept development, listing, observation, psychomotor development

Duration: 20-45 minutes or longer

Group Size: any (adjust number of food squares per size group; less than 80 pounds of food per student)

Setting: outdoors and indoors

Conceptual Framework Reference: III.A.1, III.B., III.B.1., III.B.2., III.B.3., III.D., III.D.1., III.D.2., III.D.3., III.D.4., III.E., III.E.1., III.E.2., III.F., III.F.1., III.F.2., III.F.3., III.F.4., III.F.5.

Key Vocabulary: limiting factors, habitat, shelter, cover

© 1983, 1985 Western Regional Environmental Education Council.

This activity has been adapted for Kansas. Rebecca May, adapted the activity using a common Kansas mammal - coyotes. For a complete adaptation, write Mary Kay Crall (address on back page).

Fit Into a "T"

Have you seen the Project WILD "T-shirt" yet?? They are WILD and colorful!! Sizes range from small to XX-large and they come in 14 colors. For just a Hamilton (\$10) you can purchase the environmental "T" shirt of the year. They would make a great Christmas gift - it's never too early to shop, you know.



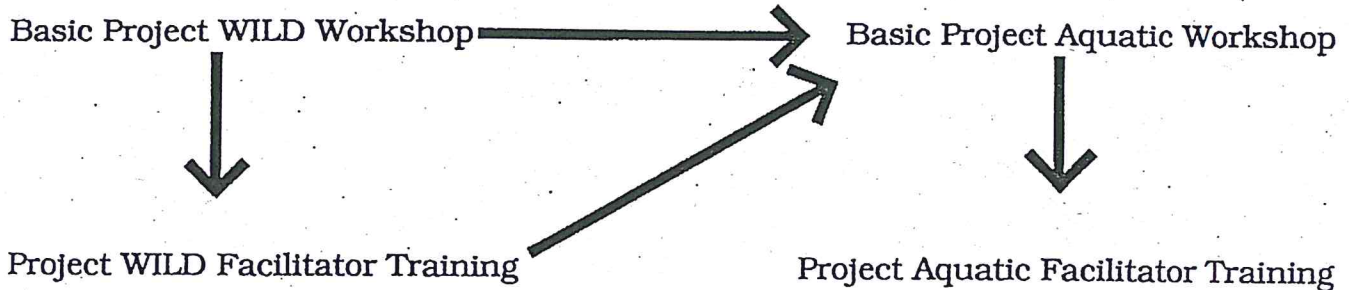
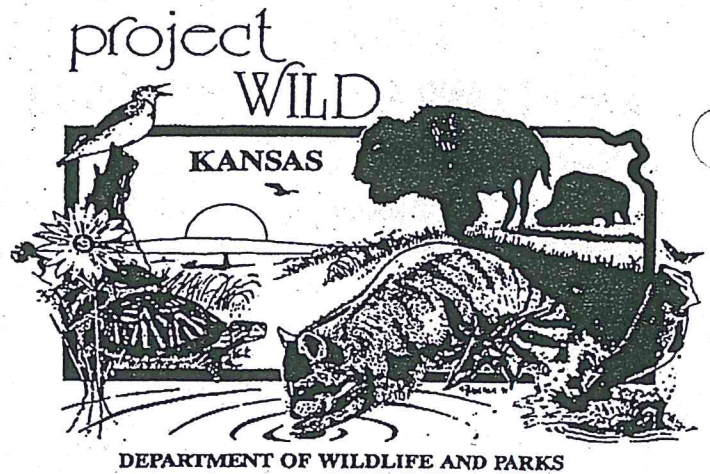
Available at most workshops or you can order directly from the Pratt office (Project WILD-Kansas, RR2 Box 54A, Pratt, KS 67124). All the individuals who are looking terrific in a Project WILD T-shirt - we appreciate your support.

What about an Aquatic T-shirt?? We are in the process of designing an aquatic T-shirt. We may be all wet, but we hope to have it available before Christmas - another great gift idea. What will it look like?? All we can say is it will be as great as the WILD design.

Order of Business

Everyone who has completed the basic 6 hour workshop in either Project WILD or Aquatic should have received a certification card. If you did not receive this card please contact Roland Stein. State where you attended the workshop, the date and the name of the facilitator. A card will be mailed to you immediately.

As of August 1, 1992 the following format has been established regarding the progressions of an individual through the available workshops.



The basic Project WILD workshop is still the backbone of the program - all other workshops extend from it. Both the basic workshop in WILD and Aquatic run six hours, the facilitator's training workshops last twelve hours.

Answers to Trivia Questions

- | | |
|---|--|
| 1. western meadowlark | 9. molting |
| 2. true | 10. down |
| 3. light bones, feathers, air sacs
aerodynamic shapes - body and
wings, wings | 11. yes - they rise into the sky at dusk
and sleep on the wing, flying down
again at dawn |
| 4. stars, sun, moon, landscape
features, magnetic fields | 12. the ostrich |
| 5. Bald eagle, whooping crane,
least tern | 13. four |
| 6. provide warmth, enable flight,
help attract a mate, camouflage | 14. true |
| 7. 1928 - Stafford County
1972 - Glen Elder reservoir | 15. true - the flamingo's color is thought
to come from the shrimp and other
water creatures it eats |
| 8. three | 16. pigeons |

WHAT'S HAPPENING??

- October 24, 1992 Project WILD Workshop. Derby. Call Joyce Bellman 316/788-7914.
- October 24, 1992 Project WILD Workshop. Salina. Call Lori Hall at 316/823-1245.
- October 24, 1992 Project Aquatic Workshop. Wichita. Call Connie Elpers at 316/264-8323.
- October 24, 1992 Project Learning Tree Workshop. Kansas City. Call Anne Miller at 913/422-5337 or 913/721-2404.
- October 24, 1992 Project Learning Tree Workshop. Ness City. Call Ray Whipple at 913/731-2223.
- November 2, 1992 Project WILD Workshop. Great Bend. Call Cindy Meter at 316/793-1518.
- November 7, 1992 Project Learning Tree Workshop. Pittsburg. Call Nancy Hurt at 316/231-4396.
- November 14, 1992 Project Learning Tree Workshop. Wichita. Call Connie Elpers at 316/264-8323.
- November 14, 1992 Project Learning Tree Workshop. Topeka. Call Pat Silovsky at 913/238-LEAF (5323).
- November 14, 1992 Project WILD Workshop. Manhattan. Call Pam Hellman at 913/532-6294.
- November 21, 1992 Project Learning Tree Workshop. Neodesha. Call Joan Miller at 316/325-3680 or 316/325-3011.
- November 21, 1992 Project Learning Tree Workshop. Kansas City. Call Rich Connell at 913/722-6153 or 913/681-4325.
- December 5, 1992 "Caring for Creatures in the Classroom" workshop will be held at the KU Museum of Natural History in Lawrence. Registration deadline is Nov. 5. Fee is \$35.00. For more information call the Museum at 913/864-4173.
- January 23, 1993 Project Learning Tree Workshop. Wichita. Call Connie Elpers at 316/264-8323.
- December 1992 Kansas Wildlife & Parks will be interviewing for seasonal naturalist positions for the 1993 season. If you would like more information on the positions or if you are interested in interviewing for a position, please contact Ed DeTrude, Program Coordinator, Wildlife & Parks, RR2 Box 54A, Pratt, KS 67124, 316/672-5911.

EAGLE DAYS are Coming in January!! This event will be held at the Milford Nature Center. Call Pat Silovsky at (913) 238-LEAF (5323).

ABOVE AND BEYOND THE CALL OF THE WILD

We would like to recognize those educators who go above and beyond to expose their students to environmental education and natural resources. If you know of an educator – you can even nominate yourself – we'd like to hear about it. Please send a one page letter describing what makes this person so special, what he/she does and how he/she gets students involved in the outdoors. Be sure and include the person's name, address, school or institution, grade level and phone number. The education staff will select an educator for each issue and highlight him/her. The 'top gun' will receive a certificate, a *Natural Kansas* book and a beautiful Kansas Birds poster. Send the letters to Mary Kay Crall (address below).

SHARE YOUR EXPERTISE

Do you present a unique or different wildlife or other natural resource activity in your class?? We're going to dedicate space for sharing activities with educators around the state. Please submit your activity (no more than one page) to Mary Kay Crall (address below). We reserve the right to edit for space.

ON T.R.A.C.K.S. IS
PUBLISHED BY THE KANSAS
DEPARTMENT OF WILDLIFE &
PARKS THREE TIMES DURING
THE SCHOOL YEAR.

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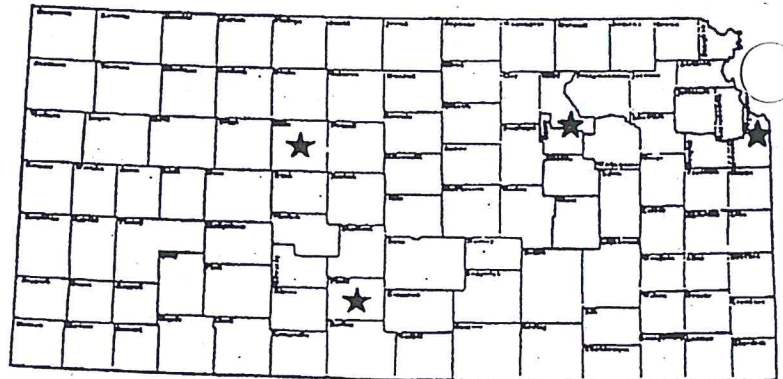


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