

ON T.R.A.C.K.S.



Teaching Resources Activities and Conservation to Kansas Students

VOL. 2 NO. 3

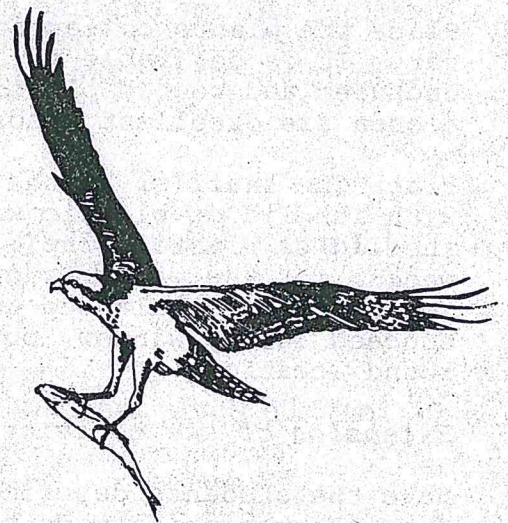
KANSAS WILDLIFE & PARKS

SPRING 1991

SPRING'S HERE!! The natural world is reawakening, bringing new life and warmth. Spring is a natural time to get kids out of the classroom and into the outdoors. This issue of On T.R.A.C.K.S. gives you ideas for springtime activities and happenings. We've geared this issue to concentrate on our precious aquatic resources. This includes water, fish and other aquatic animals. Find out about one strange looking fish and the curious nighttime serenades of frogs and toads. Learn how vitally important water is to our survival. Just how much water do you think you use each day?? You may be surprised. Wetlands and other aquatic ecosystems provide terrific learning experiences, look for activities on pages 2 through 4. We could use your help on improving our newsletter -- send in the survey on pages 13 and 14 and you'll be included in a drawing for some neat prizes. Spring holds wonderful opportunities for learning, so make some springtime tracks and explore!!

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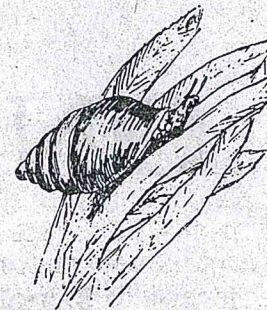


Be sure and fill out your survey on pages 13 & 14.

NATIONAL WILDLIFE WEEK IS APRIL 21ST - 27TH. See Page 15 for details.

A BALANCING ACT

Balance is important in any ecosystem, including aquatic ecosystems. This activity helps students discover for themselves what ingredients are needed in a balanced aquatic community.



Materials:

One gallon container with lid, sand and small stones, water plants from a water habitat or pet shop, snails (same source as water plants) and aquarium charcoal.

Procedure:

Obtain a wide mouth gallon jar (your school cafeteria kitchen is an ideal place). Clean the jar completely with hot, soapy water and rinse thoroughly.

Obtain river or lake shore sand/silt as free from soil as possible. Wash the sand/silt through several changes of water (no soap). Place the washed material in the bottom of the container to a depth of two inches. Mix a spoonful of charcoal into the sand.

Fill the container with water to a level that when your hand is placed in the jar the water will not overflow. Allow time for the sediments to settle. If the water is chlorinated, age it (let it stand for 24 hours).

Place the plants collected from the outdoors or bought at a pet shop into the jar. It is desirable to have two kinds of plants; floating plants like duckweed and rooted plants with their body submerged in water. Eel grass or elodea are excellent kinds (watch plant size - remember plants grow).

Place the snail(s) in the container (do not use tadpoles). Cover the jar with its lid or plastic wrap to minimize water loss (do not place holes in the lid or plastic wrap). Allow the aquarium to stand for at least two weeks. If the water is clear and has no strong odor you are in business. You now have a balanced aquatic community. Your balanced community will succeed in any window, but an east or north window is desirable for a year-round location.

Extension of the activity:

Have the students describe the changes that occur in the community (start from the beginning when the sand/silt was placed in the container) by writing, drawing or telling what they observe. Have the students predict from the evidence obtained through their observations whether the community is succeeding or failing. If failing, have them recommend treatment.

Thought Questions:

Are there changes in a community before it becomes balanced or after it is balanced

What role do the plants play in the aquatic community? What is the role of the snails? Do plants and animals change their locations?

Why does moisture form on the lid or plastic wrap? Where does it come from?

WETLANDS

Wetlands are not wastelands -- they are some of the most life-filled areas on earth. Wetlands, often referred to as marshes, swamps, or potholes, are areas of land which become seasonally or temporarily flooded. Water accumulates in these areas because a depression exists. This collected water determines what kinds of soil, plants and animals will occur in the wetland. These areas are affected by the activities which occur adjacent to it including agriculture, factories, construction and recreation. Unfortunately we're losing wetlands at an alarming rate. In the past 200 years the lower 48 states have lost 53% of their original wetlands. Kansas has lost 48% of its wetlands in the past 200 years.

The following activities are presented for the purpose of assisting teachers in increasing their students' awareness of wetlands as important natural resources.

HOW DEPRESSIONS ARE FORMED

This activity will enable students to discover how wetlands are formed.

Materials:

Sand, ice cubes or a large chunk of ice, a container like an old cake pan or cookie sheet, hair dryer (optional).

Procedure:

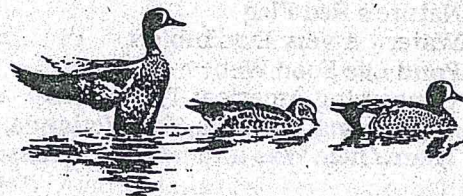
Place the ice cubes or large chunk of ice in the middle of the pan and sprinkle the sand around the ice mound until it is completely covered by a 1/2 inch or more of sand. Place the pan in a sunny area. You can speed up the process of melting the ice by using a hair dryer.

Results:

When the ice melts a depression will be formed in the sand. In a natural situation this could lead to the formation of ponds, marshes, swamps or potholes.

Evaluation Thought Questions:

What value are these depressions? Where does the water come from which fills the depression?



WHAT GOOD IS A WETLAND??

The purpose of this activity is to show students the major contributions wetlands provide as a habitat and component of the hydrological cycle?

Materials:

Resources containing information on wetlands. (The Department of Wildlife & Parks is an excellent source for obtaining such materials.)

Procedure:

Split the students into five groups and assign each group a "value" of wetland topics: A) agriculture B) water maintenance C) hydrologic cycle D) recreation E) wildlife. Inform the students a huge manufacturing company has chosen a wetland area for their site to build a new factory. There are benefits for having the factory including more jobs, increased flow of money into the community and additional tax money for the surrounding area. The construction of the factory will also destroy the wetland. Allow the groups to research their specific areas and prepare a presentation as to why the wetland should be saved. Have the five groups present their findings to the whole class allowing a question & answer period for each presentation. Following the presentation, the teacher may want to present statistics on the wetland situation in Kansas. Allow for further discussion.

Extension of the Activity:

Allow the students to form groups of business interests and have them put together a presentation for the economic side of the issue. Present both sides of the presentation to another class and see what they would allow to exist on the site - the factory or the wetland.

Evaluation:

Determine which value seems most important or which one is least important to the preservation of wetlands in Kansas.

AQUATIC MATERIALS from the Reference Center:

16mm Films

- M-6 Nature's Way - The Inland Pond
- M-20 America's Wetland
- M-75 Spring Comes to the Pond
- M-114 Prairie Slough

Computer Disk Program

- CD-9A Stream Meanders & Deltas

Pictures & Posters

- PP-54 Energy Flow in a Wetland

Video Tapes

- VT-4 Nature's Red Flag
- VT-15 Water - A Very Dry Subject
- VT-36 Pond Life Food Web
- VT-108 Conserving America: The Rivers
- VT-109 Conserving America: The Wetlands
- VT-3 There Once Was a River Called Missouri

Slide Shows

- SS-18 Ecology of a Stream

Game Kits

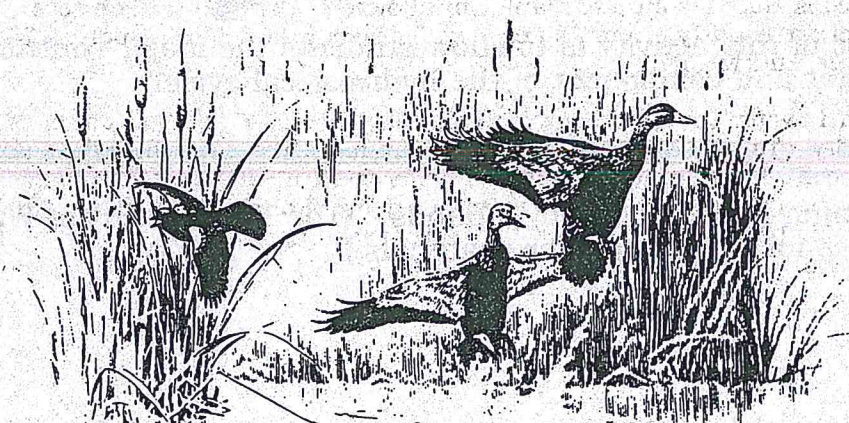
- GK-9 The Dead River

Learning Kits

- LK-10 Ponds & Lakes
- LK-11 Streams & Rivers

Filmstrips

- FS-16F Observing Living Things in a Pond
- FS-30 To Know A Pond
- FS-36 Water : We Can't Live Without It



WATER: THE ESSENCE OF LIFE

It's a fact we can't live without water. It's in us and all around us. We rely on it for life. Some wonderful facts:

Most of the earth is covered with water but only 3% is fresh water and only a small amount of this is available for use.

Oceans	97.00%
Ice Caps and Glaciers	2.24%
Ground Water	.61%
Lakes and Ponds	.009%
Atmosphere	.001%
Streams	.0001%

Each person in the United States consumes an average of 100 gallons of water per day.

The typical household in the U.S. uses more than 100,000 gallons of water per year.

Corn, pineapple and earthworms are 80% water.

Tomatoes are 95% water.

The human body is 66% water.

Toothbrushing uses an average of 2 gallons.

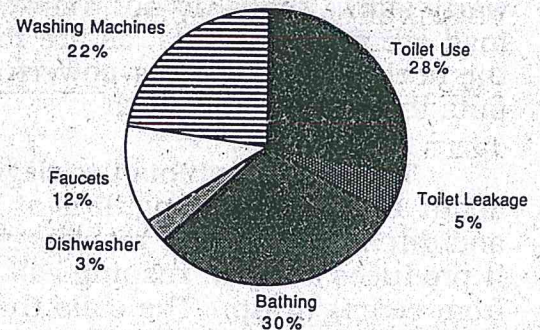
A toilet uses about 5-7 gallons per flush.

A shower uses 7-9 gallons per minute.

A washing machine uses on average 20 gallons per load.

An automatic dishwasher can use 12-20 gallons per load; hand washing dishes can use over 20 gallons.

U.S. Average Indoor Water Use



Expansion Ideas:

Discuss the need for fresh water. Current events in the Middle East have brought the importance of fresh water to light. Talk about the oil spill in the Persian Gulf and its possible effects on the Saudi's desalination plants. What are the consequences if these plants shut down?? Also, discuss the severe drought in California and its impact on the entire country. Home water use may be cut there by as much as 75%, little water will be available for agriculture and wildlife.

Have students chart their water use for a day or a week. Have them include household uses such as washing dishes, showers, laundry, drinking and flushing. Ask them how they can reduce their usage and consumption. Have the students graph their usage and compare it with their classmates to develop a class average. Bring in a gallon milk container for a reference point. For example, show them the jug and tell them every time they shower for 10 minutes they use 70 to 90 of these jugs of water.

LOVE SONGS ON A RAINY NIGHT



I look forward to the early spring thunderstorms that come to Kansas in March because it means the nights will soon be filled with a chorus of amphibian calls. These are truly the earliest sounds and activities of spring. The breeding season has begun and boisterous males will be vying for the attention of the silent females.

Kansas is host to 28 different amphibians - 20 species of frogs and toads and eight kinds of salamanders. Though salamanders are silent cousins, they too become active during the warm spring rains and may even be seen crossing roads! Amphibians are characterized by thin, moist skin and clawless toes. Since they readily lose water through the skin, they must live in or near water or in humid places to avoid drying out. All Kansas amphibians lay jelly-like eggs which hatch into water-dwelling tadpoles (frog & toads) or larvae (salamanders). The tadpoles and larvae look very different from the adults and possess external gills which are used to remove oxygen from the water. At some point, from a few days to a few years, the tadpole or larva will lose these gills and metamorphosize into the adult.

Frogs and toads are distinctive among vertebrates. They have four well-developed limbs with the hind limbs modified for jumping, no tail, and well-developed eyes with lids. Each species also has a distinctive call that is produced by the male to attract the female during the breeding season. Calls are made by passing air over the vocal chords. The most obvious difference between frogs and toads is that toads possess extremely warty skin. Toads do not, however, cause warts in people! The warts on the skin of a toad are poison glands, as are the large kidney-shaped parotid glands on either side of the neck. The poison is powerful enough to sicken a dog or other unwary predator who puts the toad in its mouth.

The first amphibian to begin calling in Kansas is the western chorus frog. Only about 1 1/2 inches long, it is at home in damp meadows and pastures or along streams and ditches. It can be recognized by five dark stripes that run along its back and sides. It produces a rapid, rasping call similar to running your thumb over the teeth of a comb from center to tip. The calls that soon follow are the plains leopard frog, northern crawfish frog, and American toad. By April, these are replaced with the calls of the plains spadefoot toad, Woodhouse's and Great Plains toads, cricket frogs and spotted chorus frogs. In May comes the largest of Kansas amphibians, the bullfrog, and the plains narrowmouth toad. Overhead can be heard the bird-like calls of the gray treefrog. By the end of June, the temporary pools that abounded in the spring have dried up and the frogs and toads must forget about breeding and go about finding a suitable place to live during the hot, dry summer.

AMPHIBIAN Materials from the Reference Center:

Filmstrips

- FS-5D Animals & How They Grow
Amphibians
- FS-13B Investigating Vertebrates -- Amphibians
- FS-14D Life Cycles -- Amphibians and Reptiles

Learning Kits

- LK-52 Amphibians & How They Grow

Videotape

- VT-60 Tadpoles & Frogs

Record

- RD-2 Natures Songs Set "The Frog Pond"

Books

- 1-1 Reptiles and Amphibians
- 1-2 Amphibians of North America
- 1-3 Amphibians and Reptiles in Kansas
- 1-3A Illustrated Guide to Amphibians

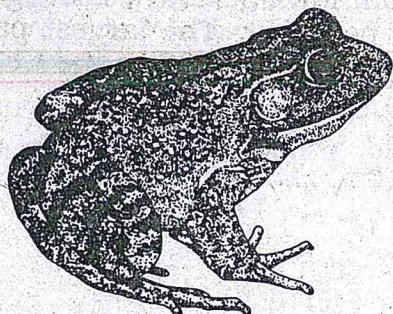
Posters

- PP-34 and PP-49

**USE THIS TABLE TO HELP YOU IDENTIFY THE CALLS OF THE MORE COMMON
KANSAS FROGS AND TOADS.**

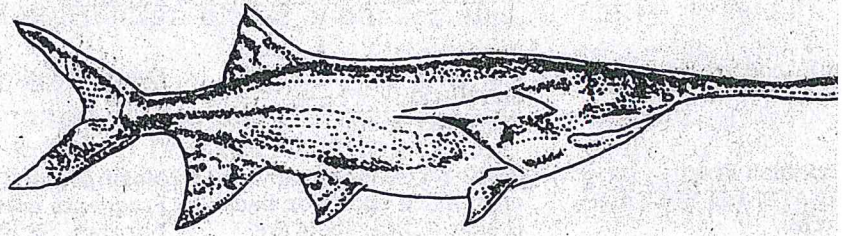
<u>SPECIES</u>	<u>DESCRIPTION</u>	<u>HABITAT</u>	<u>CALL</u>
W. Chorus Frog (March)*	1 1/2" long, 5 dark stripes that run along back & sides	Damp pastures, ditches, streams	Rapid, rasping call like running thumb on teeth of a comb
Plains Leopard Frog (March)	2 1/2-4" long, ridge of skin on each side of back, scattered spots	Every aquatic situation	Chuckle-like call of 2-3 hen-like clucks a second
N. Crawfish Frog THREATENED SPECIES (March)	2 1/2-3 1/4" long, many oval or rounded spots on back & sides. Dark spots are bordered by pale white	Moist, lowland meadows. Frequents crawfish burrows. SE Kansas only	Deep, loud snores
American Toad (March)	2-3 1/4" long, dark spotted belly, males throat is black	Eastern third of Kansas. Rocky situations in open woods.	Melodious trill of 6-30 seconds
Plains Spadefoot Toad (April)	1 1/2-2" long, pupils vertically slit, belly white back with irreg. markings	Prairie and open floodplains. Sandy areas. All except SE Kansas.	Sharp quack lasting less than 1 second
Woodhouse's Toad (April)	2 1/2-4" long, light-colored belly with no spots, back gray to brown	Prefers lowlands and sandy areas. Statewide	Dissonant trill-like bleat
Great Plains Toad (April)	2-3 1/4" long, pairs of black to brown blotches outlined with cream on the back & sides	Prairies, rarely woodlands. Open floodplains as well	High-pitched metallic vibrato of 5-50 seconds
Cricket Frog (April)	1/2-1 1/4" long, dark triangular mark between the eyes	Muddy edges of streams and ponds. Statewide	Rapid clicking
Spotted Chorus Frog (May)	3/4-1 1/4 long, dark edged pale spots scattered irreg.	Open prairie grasslands & woodland edges. South-central Kansas	Similar to W. Chorus Frog
Bullfrog (May)	5-6" long, uniform green, olive, or brown color	All aquatic situations. Statewide	Deep, reverberating br-wum, roar-like
Plains Narrowmouth Frog (May)	1-1 1/2" long, very pointed snout & small head, uniform gray, unspotted belly	Dry, rocky uplands in open woods. Eastern 2/3rds	Faint buzz lasting 2-2 1/2 seconds, preceded by short squeak
Gray Treefrog (May)	1 1/4-2" long, enlarged adhesive toepads, can change from green to gray	Trees & low shrubs of woodlands & woodland edges. Eastern third	Whistle-like tone clear & shrill, once a second

*MONTH MOST COMMONLY HEARD. ALL CAN BE HEARD FROM MARCH -- JUNE.



SPECIES SPOTLIGHT: The Paddlefish

Family: Polyodontidae
Genus: *Polyodon*
Species: *spathula*



The paddlefish is hands down the strangest looking fish in Kansas. Its uniqueness makes it impossible to mistake the paddlefish for any other fish in the state. The paddlefish lives in the Mississippi River and its tributaries including the Kansas, Marais des Cygnes, Neosho and Arkansas rivers in Kansas. Paddlefish migrate into Kansas only during the spring.

The primitive paddlefish is in a family with only two living representatives today. In addition to the paddlefish, the other fish in Polyodontidae is a gigantic fish that grows up to 20 feet in length. This fish, *Psephurus gladius*, swims the Yangtze River in China.

Unlike most fish in Kansas, the paddlefish's skeleton is mostly composed of cartilage. For this and other reasons it was incorrectly classified as a shark in the 1800's. Today the paddlefish is considered a primitive type of bony fish.

The unmistakable long snout gives this fish its name. Many theories exist regarding the snout's function. It is covered with nerve endings and seems to be some sort of sensory structure. It may also aid in the feeding habits or help the paddlefish navigate.

One of the largest freshwater fishes, the paddlefish feeds only on microscopic organisms or plankton. It feeds by keeping its mouth open and allowing the incoming water to pass through the gills where edible items are strained out and then eaten. The paddlefish lacks scales and is covered with smooth, gray skin. The gill cover, or operculum, is long and pointed. The paddlefish has teeth as a young fish but loses them as an adult.

Paddlefish migrate up streams to spawn when the water is about 60 degrees and the level is high. Females may lay from 80,000 to 250,000 eggs. The sticky eggs measure about three millimeters and cling to the bottom and develop rapidly in nine days. The young are swept downstream into deep quiet pools -- their favored habitat.

Paddlefish grow to rather large sizes. A report from Iowa several years ago indicated one paddlefish taken there weighed over 200 pounds!! The largest paddlefish caught in Kansas was 81 pounds -- a state record established in 1983 at the Chetopa Dam in the Neosho River.

HATCHING FISH



There are few times for Kansas fish hatcheries as busy as the spring. Hatcheries, like the ones at Milford or Pratt, give a needed boost to many of our gamefish populations. With over 600,000 anglers in the state, natural fish populations have a tough time keeping up.

The Milford Fish Hatchery, the newest, is a state-of-the-art "intensive culture" facility where eggs are placed in specialized hatching jars and fish are raised in concrete tanks called raceways. The Department's other hatcheries at Pratt, Meade, and Farlington are "extensive culture" facilities where fish are raised in a series of earthen ponds. Both methods have their advantages and the two methods together give Kansas the versatility to supply the needs of its anglers.

One of Kansas' most popular and highly-prized gamefish is the walleye. It is a wicked-looking fish with a glassy stare and a mouth full of sharp teeth. Walleyes spawn in Kansas in March and April when the water temperature reaches 45° to 50°F. The Milford hatchery is our only hatchery to hatch walleye eggs. Beginning in mid-March, fisheries biologists set trap nets in the large reservoirs to collect the brood stock. Ripe females (those ready to spawn) are stripped of their eggs and males milked of their sperm (milt) by applying pressure on the abdomen. The brood fish are not harmed and are returned to the water. The eggs and milt are collected in shallow pans containing about an inch of water. Timing is essential since sperm life is around 30 seconds and egg life is one minute. The eggs and milt are thoroughly mixed and after several minutes, Fuller's Earth (a type of clay) is added to coat the eggs and prevent them from sticking together. After sitting undisturbed for two to four hours, the eggs are transported in plastic bags and coolers to Milford.

In the hatchery, the eggs are placed in hatching jars with approximately 300,000 eggs per jar. (A female may produce 25,000 to 40,000 eggs per pound of her weight. One large female may have 300,000 eggs!) Water is piped down the center of the jars and wells up from the bottom to keep the eggs rolling. This action supplies the eggs with plenty of oxygen and keeps them from clumping together. After about ten days, the eggs hatch and the fry (newly-hatched fish) swim to the top of the jars and are carried by the flowing water into the large catch tanks. The fry are held about four days, until their mouths are well-developed, and then stocked into Kansas lakes and reservoirs. Some may be sent to other hatchery ponds for rearing to fingerling size (about 3").

This may seem like a lot of work but artificial hatching results in more fry in our waters than natural spawning. In a natural setting, environmental hazards such as varying water temperature, wave action, siltation, and predation destroy many

eggs. Fewer than 20% of the eggs may hatch. The Milford Hatchery can successfully hatch 50-70% of the eggs it receives thereby increasing the fry populations in Kansas waters. In 1990, 83 million walleye eggs were at Milford throughout the month of April!!

Other fish populations helped in similar ways by hatcheries are channel catfish, largemouth bass, striped bass, wipers, crappie, bluegill, and smallmouth bass. Each of our hatcheries play an important role in supplying fish for our enjoyment.

Tours of the Milford Fish Hatchery are available by scheduling a time with the Milford Education Center. April is the best time to view walleye eggs.

** Adapted from Hatchery Help for Walleyes, Partners With Wildlife.

FISH MATERIALS from the Reference Center:

16mm Films

- M-35 Fish and Their Characteristics
- M-74 Animals That Live in Waters

Filmstrips

- FS-5B Animals and How they Grow
- FS-13D Investigating Vertebrates: Fish
- FS-14B Life Cycles: Fishes

Slideshow

- SS-27 Fishes Set

Learning Kits

- LK-62A Fish Set
- LK-59 Partners With Wildlife

Books

- 2-1 Fishes
- 2-2 Fishes in Kansas
- 9-2 Producing Fish & Wildlife From Kansas Ponds

Posters

- PP-11 Striped Bass
- PP-7 Crappie
- PP-9 Catfish
- PP-10 Channel Catfish

Videotapes

- VT-138 The Channel Catfish Story



GOOD STUFF FROM THE KU MUSEUM OF NATURAL HISTORY

The Museum of Natural History at the University of Kansas continues to offer programs, traveling kits of loan materials, and other educational services to teachers and students around the state.

Presentations on a wide range of topics are available in school classrooms as well as at the Museum. Traveling kits containing actual specimens, text, filmstrips, and posters may be borrowed for one week. Program and kit topics include birds, mammals, fish, fossils, geology, insects, reptiles and amphibians.

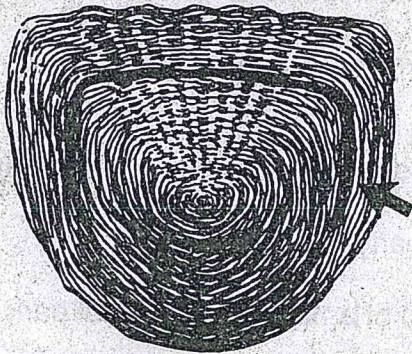
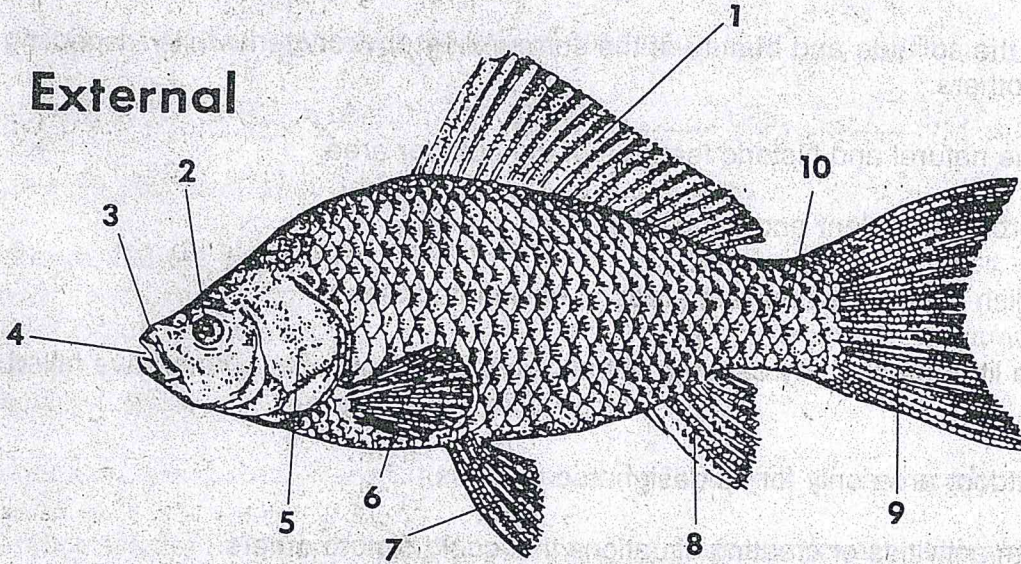
"Animals of the Arctic" will be a special program offered May 8, 13, and 17. Included is a short film on polar bears, caribou and other arctic inhabitants, plus a lively introduction and discussion by Thor Holmes of the Museum Staff.

All programs and kits must be reserved in advance. For fee and reservation information, contact the Office of Public Education at (913) 864-4173.

ANATOMY OF A FISH

Study the body parts below then cover up the answer key and quiz yourself.

External



SCALE CLOSEUP

Fisheries biologists take scale samples from fish to determine age and rate of growth.

The dark line is an annulus that marks one year in the life of a fish. This scale is from a fish in its second year.

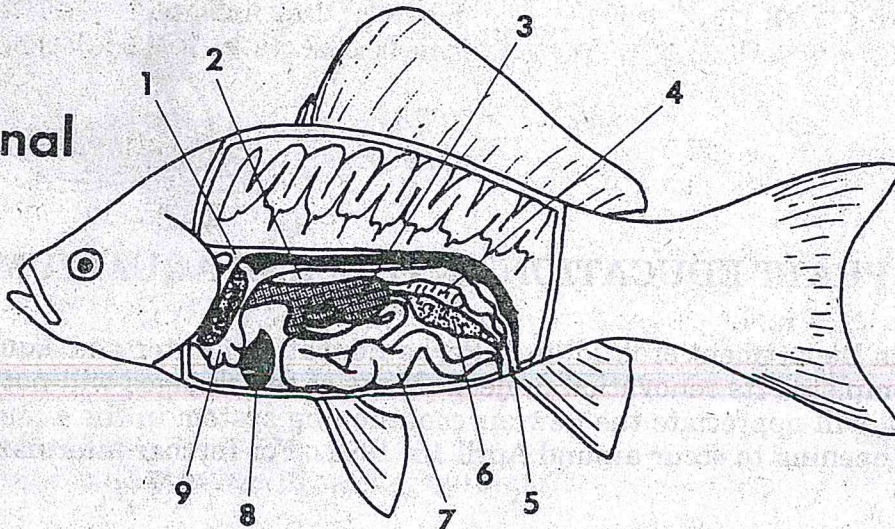
FISH – EXTERNAL

- | | |
|---------------------------|----------------------|
| 1. Dorsal Fin | 6. Pectoral Fin |
| 2. Eye | 7. Ventral Fin |
| 3. Nostril | 8. Anal Fin |
| 4. Mouth | 9. Caudal (Tail) Fin |
| 5. Operculum (Gill Cover) | 10. Scale |

FISH – INTERNAL

- | | |
|-----------------|--------------|
| 1. Dorsal Aorta | 6. Ovary |
| 2. Kidney | 7. Intestine |
| 3. Stomach | 8. Liver |
| 4. Swim Bladder | 9. Heart |
| 5. Anus | |

Internal



THE OUTDOOR USER'S CODE OF ETHICS

Soon the weather will draw many of us outdoors for fishing, boating and walks in woodlands, fields, parks and other outdoor areas. We will be sharing these facilities and moments with other individuals. For all of us to share and enjoy these outdoor experiences we need to respect the area and those utilizing it. The following is not intended to limit our freedom, but to allow all of us to enjoy to the fullest the dwindling amount of open spaces we share with others.

1. Appreciate the solitude and beauty of the surrounding environment while respecting the feelings of others.
2. Preserve the natural and historic features of the outdoor area.
3. Avoid disturbing the plant and animal life.
4. Only establish campsites and rest areas at designated areas.
5. Reduce the litter problem by carrying out all you take in and what others have failed to take out.
6. Use the outdoor area only for its designated purpose.
7. Refrain from activities or creating situations that could disturb others.
8. Promote the use of guides, education materials and equipment which assist area users to achieve maximum enjoyment.
9. Exercise utmost care with open fires.
10. Try not to exceed your physical capabilities and be prepared to meet emergency situations.
11. Treat property with the same care you would your own property.

You may wish to develop your own code of ethics for the utilization of a natural area, local park or school grounds.



PRATT EDUCATION CENTER AND AQUARIUM

The Kansas Department of Wildlife & Parks Education Center and Aquarium in Pratt has just about completed its renovation project. Many of the changes will not be very noticeable, but all will appreciate the new air conditioning system in the summer months. We anticipate the re-opening to occur around April 15, 1991. For further information call (316) 672-5911, ext. 108.

Please take a few minutes to tell us how we're doing with On T.R.A.C.K.S.

How do you receive your copy of On T.R.A.C.K.S.?

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Have you received both the Fall 1990 and Winter 1991 editions?? YES NO

Do you feel On T.R.A.C.K.S. is a useful publication?? YES NO

What features do you find most useful?? Check all that apply.

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|---|---|
| <input type="checkbox"/> Reference Center information | <input type="checkbox"/> informational articles |
| <input type="checkbox"/> activity descriptions | <input type="checkbox"/> upcoming events |
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| <input type="checkbox"/> Looking Beyond Wildlife Education Services
(info about other environmental ed. resources) | <input type="checkbox"/> Species Spotlight |

What features have you actually used in your classroom?? Check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Reference Center information | <input type="checkbox"/> informational articles |
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| <input type="checkbox"/> Looking Beyond Wildlife Education Services
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Are there any features you find not useful (other than those not applicable due to grade level)?
 YES NO If yes, please name:

Do you find On T.R.A.C.K.S.'s layout easy to read?? YES NO
(If NO, please provide suggestions for improvement.)

Do you find On T.R.A.C.K.S.'s layout easy to use?? YES NO
(If NO, please provide suggestions for improvement.)

What activity article have you enjoyed the most??

What activity articles would you like to see in the future??



Do you borrow materials from the Reference Center??

YES NO If no, why not?

How frequently each year do you use the Reference Center??

0-4, 5-9, 10-14, 15 and above

Are you familiar with Kansas Wildlife & Parks' Curriculum Materials??

YES NO

Are you familiar with Kansas Wildlife & Parks' elementary supplement, "*There's Something Wild in Natures' Notebook*"?? YES NO

This is a newsletter for you to use. What could we do to improve On T.R.A.C.K.S., to make it easier for you to use?? Please make any additional comments below.

NAME:

School:

Address:

City:

State:

Zip Code:

Please cut page and mail your completed survey to: Mary Kay Crall

Kansas Wildlife & Parks

9539 Alden

Lenexa, KS 66215

Those responding will be eligible for three drawings. Surveys must be received in this office no later than May 3, 1991 to be in the drawing. To be included in the drawing you must include your name, school and mailing address. So get your survey in now!!

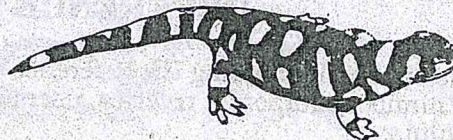
1st prize -- Natural Kansas 1985 - This book is about the natural phenomena of Kansas; its water, land, weather, plants and animals. It was written for the Kansan who is curious about the natural composition of our environment -- \$25.00 value.

2nd prize -- 1989 numbered limited edition of the Kansas Wildlife & Parks belt buckle -- \$10.00 value.

3rd prize -- Kansas Department of Wildlife & Parks tee shirt in your size -- \$7.00 value.

THANK YOU FOR YOUR TIME!!

HAPPENINGS.....



FREE FISHING AND PARK ENTRANCE DAYS

June 8th and 9th mark the days that anyone can fish in Kansas without a state fishing license and enter Kansas state parks free of charge. What a wonderful way to experience the outdoors!! (Be sure to check with city and county parks for information regarding their permits. Also, camping fees at state parks will still be in effect.)

NATIONAL FISHING WEEK AND MILFORD FISHING CLINIC

Summer is just around the corner and now is the time to start thinking about those lazy days of fishing. National Fishing Week is June 3-9, 1991. To celebrate this week, the Education Center and the U.S. Army Corps of Engineers will sponsor a kids "Fishing for Fun" clinic on Saturday, June 8, at Milford Lake. Loaner poles will be available free of charge for anyone without equipment and bait will be provided. Details will be announced to area schools during May. Come out and join the fun.

NATIONAL WILDLIFE WEEK

National Wildlife Week is April 21-27, 1991. This year's theme is "Fragile Frontiers--The Ends of the Earth". Teacher packets put out by the National Wildlife Federation are available free of charge. Check with your local Soil Conservation Service office to inquire about distribution in your area. A limited supply of packets will be available at the Milford Conservation Education Center and the Kansas City District Office -- call for information.

MILFORD CONSERVATION EDUCATION DEDICATION

The dedication of the Milford Conservation Education Center will take place Thursday, April 25, in recognition of April being Earth Action Month and the 21st anniversary of Earth Day. Anyone interested in attending may call (913) 238-5323 for more information.

KATS KAMP AND WILDLIFE & PARKS

Seminars on the materials available from the Wildlife Reference Center will be offered at the annual Kansas Association of Teachers of Science (KATS) meeting April 26-28, 1991 at Rock Springs Ranch. A tour of the newly dedicated Milford Conservation Education Center will also be offered. See you there!!

ENVIRONMENTAL EDUCATION COURSE

Wichita State University is offering a summer environmental education course beginning June 10, 1991. The course (CI 7530) will meet Monday through Thursday from 8am to 12pm for three weeks. Three hours of graduate credit can be obtained upon successfully completing the course (standard grading will be utilized). Registration will take place through the regular summer school enrollment procedure.

The course will be divided into two sections especially designed for teachers in grades K-5 and 6-12. This will definitely be a hands-on learning experience utilizing a wide spectrum of activities, materials and presenters. For more information call (316) 689-3322 and ask for either Cathy Yeotis (secondary science) or Twyla Sherman (elementary education).

EARTH DAY AND EARTH WEEK



April 21-27 is the annual observance of Earth Week. April is also "Keep America Beautiful Month". What can you do? Contribute to the larger effort. If everyone in the U.S. saved 10 gallons of water a year, we would save over two billion gallons!! Set an example for others to follow: Save Energy, Conserve Water, Watch your Disposal of Solid Waste.

REFERENCE CENTER REMINDER

With the approach of spring the Reference Center will enter into one of its busiest times of the year. Because of the number of orders it receives, users are urged to make their request as far in advance as possible. Some helpful hints:

1. Please try to give us at least 2 weeks notice on requests.
2. Be specific as possible giving requested use date and alternates. We sometimes have to return order forms that don't list specific use dates because scheduling becomes too time consuming if we have to guess at use dates for you.
3. It's important items are returned by the due date; other users may have been promised those materials by a certain date and will certainly be disappointed if we are unable to send them. The due date for each item will be high-lighted on the address label card for that item. Please check all the cards you receive; time limits vary depending on the type of materials. If you need more time for use, please let us know. We may be able to extend the time allowed.

Thank you for your attention to the condition of returned materials. Check-in of returns is very time-consuming. It is quite helpful if you let us know of any damage or missing parts you're aware of when you return materials to us.

All reference materials are available on a free loan arrangement with the user responsible for return postage and insurance. We look forward to fulfilling your needs. Please contact us if you have any questions or concerns - (316) 672-5911, ext. 209.

And, most of all, we want to thank you for your kind words, enthusiasm and helpful suggestions about our service. It's great to feel appreciated.

--Maxine Crosley and Mary Garner

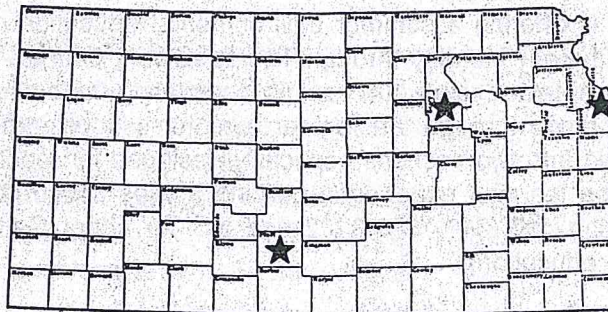
NEW MATERIALS

Videotape VT-138

The Channel Catfish Story The channel catfish is a very popular sportfish in Kansas. Because of its popularity with anglers, the Department of Wildlife & Parks has established a very intensified stocking program. The Channel Catfish Story provides excellent behind-the-scenes footage of the channel catfish hatchery programs in the Pratt and Milford hatcheries. Students learn the work and dedication involved in raising channel catfish from eggs to fry to fish ready to be released in the waters of Kansas. It also gives students a perspective of career opportunities in fisheries management.

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