An Outline for Conservation Teaching in Kansas
The Kansas School Naturalist

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CONSERVATION TEACHING

This issue of The Kansas School Naturalist is written as a suggested guide for teachers of grades 1 to 6 in Kansas schools, so that the teachers may have an entire plan in mind when they are presenting any one phase of conservation to their pupils.

One of the needs for effective conservation teaching in Kansas has been a general outline setting forth a scope and sequence of topics. Since the elementary curriculum is heavily loaded, conservation teaching material needs to be fitted in as a part of other subjects. The "key to the kingdom" is the initiative and creative vision that springs from the teacher.

This guide is only a suggestion. If it is followed from year to year, the pupils will have an opportunity to learn something about most of the major phases of conservation, and will not repeat any of them to the exclusion of others. The sequences shown in this guide are actually in use in many schools; nothing radical or difficult is proposed.

This issue of The Kansas School Naturalist was written for Kansas elementary teachers, by Kansas elementary teachers. The actual writing was done as a part of the second, or production, section of the 1957 Workshop in Conservation at the Kansas State Teachers College of Emporia. The committee in charge consisted of Gloria Ann Beck, Clay Center; Pearl B. Campbell, Westmoreland; Rose Ethel Ford, Burns; Patricia M. Johnson, Perth; Inez Leach, Maple Hill; Mabel Lynch, Summer School, Topeka; Lola Ione Razor, Marion.

It is the hope of the committee in charge, and of the editorial committee of The Kansas School Naturalist, that many Kansas teachers will use this guide and will send the editor their criticisms, comments, and suggestions.

GRADE ONE

I. OBJECTIVES
A. To develop safety habits that will serve the child at school and on the way to and from school.
B. To develop good attitudes toward health habits.
C. To stimulate the child's curiosity about the living plants and animals about him.
D. To develop an awareness of the needs of plants and animals.
E. To develop a "sense of responsibility."

II. TOPICAL OUTLINE
A. Human resources
   1. Safety to and from school
      a. With a safety patrol
         (1) Knowing what the patrol is and does
         (2) Obeying the patrol
      b. Without a patrol
         (1) Looking to right
and left before crossing street or road
(2) Crossing only at intersections or marked walks
c. For traffic lights
(1) Watching the lights
   (a) Green says "go"
   (b) Red says "stop"
(2) Waiting until cars have stopped

d. For riding on bus
(1) Staying on sidewalk or side of road until bus arrives
(2) Waiting turn to get on bus
(3) Sitting still in bus
(4) Keeping arms and head inside bus

e. In school
(1) Walking, not running, in halls and rooms
(2) Holding hand-rail when going up or down stairs
(3) Keeping to right
(4) Looking where you are going
(5) Care in carrying scissors or knives
(6) Care in moving chairs or other heavy objects
(7) Mop up spilled liquids

2. Health rules
   a. The schoolroom
      (1) Keeping room clean
      (2) Reading with light over shoulder
   b. Personal health habits
      (1) Washing hands before meals and after toilet
      (2) Brushing teeth after meals
      (3) Regular bathing and washing of hair
      (4) Clean clothes
      (5) Keeping foreign objects out of mouth, nose, and ears
   c. Healthful foods
      (1) Chart of the basic seven
      (2) Choice of food
      (3) Milk with each meal
      (4) A tasting party; experimenting with new tastes
d. Resting
   (1) After play
   (2) Quiet hour before bedtime
   (3) Plenty of sleep
e. Clothing
   (1) Adjusting clothes to the weather
   (2) Taking off heavy coats and boots while inside
B. Animals
1. Need for comfortable homes, food, water, air, and right temperature
2. Different ways of eating, drinking, and breathing
3. Different ways of moving about: running, crawling, swimming, flying, hopping
4. Parental care—e.g., birds, kittens, puppies
5. Absence of parental care in other species—e.g., frogs, most fishes
6. Different ways of caring for themselves
7. Differences between pets and wild animals; wild animals happier in their own habitat

C. Plants
1. Different kinds of plants
2. Plants being living things, even though not as obviously so as in the case of animals
3. Need for air, water, food, light, and suitable temperature
4. Light and warmth from the sun
5. Food and water from the soil
6. Propagation by: seeds, bulbs, cuttings

D. Miscellaneous
1. Not being a litterbug
2. Keeping desk in order
3. Putting waste paper in wastebasket
4. Not wasting, losing, or misusing paper, pencils, chalk, paste, and other supplies
5. Being careful with books

III. EVALUATION
A. Have the children developed a liking for plants and animals?
B. Have they grown in their knowledge of the needs of plants and animals?
C. Have they developed good health habits?
D. Have they developed good safety habits?
E. Have they developed respect for the school and its contents?
F. Are they being careful with their books, clothes, and other personal property?

GRADE TWO

I. OBJECTIVES
A. To develop understandings, attitudes, and habits favorable to good personal and community health and safety.
B. To develop an awareness of seasonal changes and their effects on plants and animals.
C. To show how plants and animals depend on soil, water, and sunshine.
D. To show how man depends on plants and animals.
E. To become aware of our mineral resources.
II. TOPICAL OUTLINE

1. Choosing safe places for outdoor play, at home and at school
   a. Play activities suited to various play areas
   b. Posters to illustrate safe and unsafe play activities

2. Respect for our health and safety helpers
   a. Community safety helpers
      (1) Policemen
      (2) School patrol
      (3) Traffic officers
      (4) Highway patrol
   b. Community health helpers
      (1) School doctors
      (2) School nurses
      (3) Family physician
      (4) Clinical workers

3. Housekeeping rules for the schoolroom and playground

B. Animals

1. Seasonal changes and how they affect wild animals, pets, and domestic animals
   a. Migration, as in birds
   b. Hibernation, as in frogs
   c. Color changes, as in birds
   d. Food storing activities, as with squirrels

2. Care of classroom pets
   a. Diets, habits, and natural habitats
   b. Return of wild animals to natural or suitable habitats after period of classroom observation

3. Animal babies
   a. Ways in which they differ and ways in which they are alike
   b. Ways in which they depend on their parents.
   c. Their food, shelter, protection, and modes of travel
   d. Animal babies that are not protected by their parents

C. Soil

1. How soils differ
   a. Sandy soil
   b. Clay soil
   c. Humus and its importance

2. Growing plants in various types of soil

3. Ways to protect the soil from eroding
   a. Trees, grasses, weeds, and crops near the school
   b. Pictures or visits to nearby farms, showing how farmers protect their soil

D. Water

1. Value of water; how plants and animals depend on it.

2. How man uses water

3. Water conservation at school
   a. Turning off faucets
   b. Reporting leaking faucets or broken pipes
   c. Posters showing how water may be saved
4. How water may be dangerous
   a. Ways in which water may be harmful
   b. Effects of floods
   c. Soil erosion in fields, pastures, and gardens
   d. Damage to roads
   e. Damage to plants and animals

E. Plants
1. Ways in which plants are fitted to the places in which they live
2. Seeds produced by plants
   a. Parts of plants
   b. Flowers, which produce seeds
   c. Seeds producing new plants
   d. What seeds need to produce new plants: air, water, and suitable temperature
3. Ways in which seeds travel
   a. "Parachutes" for travel by air—dandelion seed
   b. Wings for travel by air—maple seed
   c. Seeds floating away on water—water lily
   d. Seeds "catching rides" on animals and peoples' clothing—cocklebur

4. Trees
   a. Effects of seasons
   b. Uses of trees
   c. Protection of trees
   d. Planting of trees—Arbor Day
   e. Hedgerows and woodlots
   f. Kinds of animals that live in, on, and under trees

F. Minerals
1. Mineral composition of the earth—rocks, sand, clay, soil, air, water
2. Everyday uses of the materials of the earth
3. Nonrenewability of minerals, as compared with living resources

III. EVALUATION
A. Have the children become more curious concerning their environment?
B. Do they note sequences of seasonal change?
C. Have they overcome fears and superstitions they may have had regarding animals?
D. Have they developed personal responsibilities for helping to provide a safe and healthful environment?
E. Do they realize that some of our resources are nonrenewable?
F. Are they more aware of the general need for conserving resources?

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COVER PICTURE—Elementary students of Thomas Butcher School, picture by E. L. Anderson of the office of Graphic Arts.
GRADE THREE

I. OBJECTIVES
A. To learn what our natural resources are, and to appreciate them.
B. To learn more about conservation methods and to apply them to different situations.
C. To learn to use conservation in the community after having applied it in the home and school.
D. To become conscious of, understand, and practice conservation methods.
E. To learn the Conservation Pledge and to comprehend its meaning.

II. TOPICAL OUTLINE
A. Human resources
1. Home safety
   a. Matches and fire
   b. Objects on high shelves
   d. Stair safety
   e. Toys and safety
   f. Keeping things in their proper places
2. Reasons for keeping healthy
   a. Personal comfort, activity, and play
   b. One’s health affecting others
B. Animals
1. Kinds of animals
2. Life cycles
3. Animal food
   a. What they obtain for themselves
   b. How we can help
4. Animal shelter
   a. What they provide for themselves
   b. How we can help
5. Protection of animals
   a. Fish and game laws
   b. Value of animals
   c. School and home projects in animal care and feeding
6. Values of animals
   a. As food
   b. Products—fur, milk, wool, leather
   c. Indirect values—eating insects, aerating soil
7. Birds
   a. Special values
   b. Protection and attraction to home or schoolyard
C. Soil
1. Need for soil—to grow necessary animal food
2. Uses of soil
   a. Growing food
   b. Building roads and dams
   c. Uses of soil minerals
   d. Sources of vitamins and antibiotics
3. Conservation of soil
   a. Ground cover
   b. Contour farming
   c. Stripping and terracing
   d. Summer fallowing
   e. Mulching
   f. Water-retention structures
D. Water
1. Wise use of water
   a. Home uses
   b. Agricultural uses
   c. Industrial uses
   d. Recreational uses
2. Misuse of water
   a. Excessive runoff
   b. Pollution
3. Composition of water
   a. Pure water
   b. Dissolved minerals
   c. Suspended matter and impurities

E. Plants
1. Small plants
   a. Experiments with potted plants and small gardens
2. Large plants—trees and shrubs
   a. Planting trees and shrubs
   b. Uses of trees and shrubs

F. Minerals
1. Air as a "mineral"
2. Ways in which air is necessary
3. Fuel
   a. Mineral fuels—coal, oil, gas (especially important in Kansas)
   b. Nonmineral fuel—wood
4. Other minerals—iron ore, lead, zinc, gold, silver, stone, volcanic ash

G. Miscellaneous
1. Indians as conservationists
   a. Used only what they needed
   b. Gave plants and wildlife a chance to replenish

III. EVALUATION
A. Have the children been able to broaden their knowledge of various types and methods of conservation?
B. Have they developed an appreciation of, and responsibility toward, the future?
C. Has the teacher been able to create a desire for means of practicing conservation?
D. Have the children taken home their new ideas about conservation?
E. Have any of the parents expressed an interest in their children's work in conservation?
F. Do the children realize the difference between renewable and nonrenewable resources?

GRADE FOUR

I. OBJECTIVES
A. To know and understand the need for care of our human resources.
B. To realize the hazards that are present in our community.
C. To understand the reasons for protecting wildlife homes.
D. To understand the structure of the soil, subsoil, and the elements that attack it.
SUGGESTED OUTLINE FOR TEACHING CONSERVATION IN KANSAS ELEMENTARY SCHOOLS

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E. To realize that all living things need water for life and growth, and that our limited water supply should be guarded.
F. To realize the interdependence of all resources.
G. To develop a feeling of responsibility for the best use of all resources.

II. TOPICAL OUTLINE
A. Human resources
1. Traffic safety
   a. Signs
   b. Rules
2. Public buildings
   a. Safety devices
   b. Signs
   c. Policemen
3. Parks and pools
   a. Lifeguard at pool
   b. Ground nest
B. Animal homes
1. Grassland homes
   a. Burrowing homes
      (1) Prairie dog
      (2) Gopher
      (3) Burrowing owl
      (4) Badger
      (5) Fox
      (6) Coyote
      (7) Skunk
      b. Signs
      c. Rules
   4. Community workers
      a. Safety for farmers
      b. Safety for merchants
      c. Safety for firemen
      d. Safety for electricians
      e. Safety for nurses and doctors
      f. Safety for highway workers
2. Woodland homes
   a. Burrowing homes
      (1) Skunk
      (2) Red fox
      (3) Coyote
      (4) Ground squirrel
   b. Hollow tree homes
      (1) Raccoon
      (2) Squirrel
      (3) Opossum
      (4) Owl
      (5) Wildcat
      (6) Woodpecker
   c. Treetop nests
      (1) Oriole
      (2) Crow
      (3) Squirrel
      (4) Hawk and eagle
3. Stream and water-edge homes
   a. Water homes
      (1) Fish
      (2) Crayfish
   b. Edge-of-water homes
      (1) Turtle
      (2) Frog
      (3) Muskrat
      (4) Mink
      (5) Otter
   c. Bushes near water
      (1) Red-winged blackbird
      (2) Heron
      (3) Sandpiper
      (4) Coot
      (5) Bob-o-link
   d. Pond homes
      (1) Beaver
      (2) Muskrat
4. Shelterbelt homes
   (1) Quail
   (2) Pheasant
   (3) Opossum
   (4) Weasel
   (5) Coyote
   (6) Skunk
5. Field trips to study wildlife homes
6. Fish and Game laws, and why they are necessary

C. Soil
1. The soil profile
   a. Topsoil, consisting of humus, sand, clay, silt, loess, loam, and rock fragments in various combinations
   b. Subsoil
      (1) Composition
      (2) Effect on water stored in soil
2. Soil erosion
   a. By water: gully, sheet erosion
   b. By wind
   c. Erosion in the schoolyard
   d. Erosion along the highway
   e. Corrective measures
   f. Watershed control

D. Water
1. Source of all water
2. Water cycle
3. "Normal" rainfall
4. Uses of water
   a. Drinking and home use
   b. For growing plants
   c. Fire protection
   d. Homes for wildlife
   e. Washing cars, streets, buildings

E. Plants
1. Native grasses, pastures
   a. Grasses
   b. Legumes
   c. Forbs
2. Grass as a cover crop
   a. Erosion control
   b. Holds rain where it falls
   c. Increases rate of water absorption by soil
   d. Homes for prairie wildlife
3. Special importance of grass in Kansas
   a. Erosion control
   b. Hay as a crop
   c. Grazing

F. Minerals
1. Coal, oil, and gas as sources of light, heat, and electricity
2. Locations of these minerals in Kansas
3. Wise use of these resources, so as to leave some for the future

G. Miscellaneous
1. Laws of Kansas
   a. Fish and game
   b. Highway
   c. Soil Conservation
d. Public Health
2. Importance of obeying these laws

III. EVALUATION
A. Do the children understand why they should take advantage of all health and safety rules of the community?
B. Do they realize the part played in the scheme of life by wildlife and native plants?
C. Does the child have an appreciation of the soil as the source of his food and his health?
D. Does the child understand how the soil is damaged and how it may be protected and improved?
E. Does the child realize the importance of water in his home and his community?
F. Does he understand something of the interdependence of the various resources?
G. Has the child's feeling of responsibility been fostered during the year?

GRADE FIVE

I. OBJECTIVES
A. To understand further the meaning of conservation.
B. To recognize the differences between renewable and nonrenewable resources, in terms of conservation practices.
C. To understand that the conservation of soil, water, minerals, plants, and animals is an interrelated whole.
D. To realize how important conservation is to the continued progress of the community and the nation, as well as to the individual.
E. To give further attention to the pupils' own part in conservation activity.

II. TOPICAL OUTLINE
A. Human resources
   1. Sanitation and healthful living
      a. Need for a balanced diet
   b. Need for body cleanliness
2. Mental health
   a. Purposes of the human brain
   b. Results of improper habits and behavior
3. Safety
   B. Animals
   1. Some important kinds of wildlife
      a. Birds
         (1) Game birds
         (2) Birds of prey
         (3) Song birds
         (4) Resident and migratory birds
      b. Mammals
         1. Fur-bearing animals
         2. Game animals
         3. Nongame animals
      c. Fishes
         (1) Game fishes
         (2) Nongame fishes
         (3) Fishes in a school aquarium
d. Amphibians
   (1) Frogs and toads
   (2) Salamanders

e. Reptiles
   (1) Lizards
   (2) Turtles
   (3) Snakes
   (4) Reptiles and amphibians in the schoolroom

2. Values of wildlife
   a. Balance of nature
      (1) Food chains
      (2) Pollination
      (3) Seed dispersal
   b. To man
      (1) Economic
      (2) Recreational
      (3) Aesthetic

3. How wildlife can be helped
   a. Obeying laws and reporting violations
   b. Study of local needs and support of local conservation organizations
   c. Working for better sewage disposal and pollution control
   d. Working for better control of brush and grass fires
   e. Planting trees and brush shelter
   f. Feeding wildlife
   g. Stream improvement

C. Soil
1. Types of soil, in more detail and in terms of the specific community
2. Soil erosion and erosion control, in terms of the specific community
3. Watershed control, with particular reference to the effects on soil and its improvement

4. Maintaining soil fertility
   a. Green-manure crops
   b. Barnyard manure
   c. Mineral fertilizers
   d. Crop rotation

D. Water
1. Conservation of water during periods of drought
2. Flood control, in terms of relation between soil improvement and large impoundments
3. How plants control water
4. Pollution control
   a. Industrial pollution
   b. Bacterial pollution
   c. An effective sewage disposal plant
   d. Drainage from barnyards and toilets

E. Plants
1. Woodlands—where they are found in Kansas
2. Common trees and tree types in the specific community
3. Uses of trees in Kansas
4. Trees in public parks—their protection and improvement
5. Farm woodlots and windbreaks

F. Miscellaneous
1. The "litterbug" problem
2. Increased attention to the recreational and non-economic uses of natural resources

III. EVALUATION
A. Have the pupils gained an increased understanding of
the real meaning of conservation?
A. Have the pupils developed some basic understanding of the importance of water?
C. Have they developed a broad concept of wildlife, rather than just thinking of it as game animals and fishes?
D. Do they have an increased respect for laws and regulations?
E. Have the pupils learned about some of the methods used locally in various types of conservation?

GRADE SIX

I. OBJECTIVES
A. To acquire a knowledge of a balanced diet.
B. To develop a more mature set of safety habits.
C. To acquire a working knowledge of some of the species and habits of common wildlife.
D. To recognize some of the cause-and-effect relationships involved in the problems of conservation.
E. To see that some of the problems of conservation are so large that they must be solved with the help of the government.
F. To acquire a beginning understanding of the problems of careful management of water and other resources.

II. TOPICAL OUTLINE
A. Human resources
1. Balanced diet
   a. The basic seven
   b. Importance of calories
   c. Importance of minerals and vitamins
2. Safety
   a. Bicycle safety
   b. Motor scooters
   c. Preparation for automobile driving
   d. Highway markers and signs
B. Animals
1. Identification of birds
   a. How to identify
   b. Game birds, songbirds, shore birds, birds of prey, water birds
   c. Summer residents, winter residents, transients
2. Migration of birds
   a. Which birds migrate
   b. Migration routes
   c. Hazards of migration
3. Protection of birds
   a. Development of appreciation for birds
   b. Game laws
   c. Wildlife refuges
   d. Birdhouses and feeders
4. Interdependence of plants, animals, and man
   a. Cultivated plants and domestic animals
   b. Wild plants and animals
C. Soil
1. Conservation practices for saving the soil
   a. Crop rotation (cash crop rotated with legumes)
   b. Improved methods of farming
   c. Shelter belts
   d. Restoring grasslands
   e. Grass waterways
   f. Fertilizers

2. How earth's surface changes
   a. Development of new plants
   b. History of living things
   c. Why some kinds of living things have disappeared

3. Soil testing
   a. Types of soil
      (1) Acid
      (2) Alkaline
      (3) Neutral
   b. Best uses of different kinds of soil, based on soil tests

D. Water
1. Water conservation in periods of prolonged drouth
   a. Water restrictions
   b. Careful use of water in large impoundments
   c. Digging of new wells

2. Flood control
   a. Correct land use
   b. Spillways and floodways
   c. Woodlands and other protective vegetation
   d. Storage reservoirs
   e. Levees

f. Large impoundments
   g. Importance of using all devices and not depending on just one or a few of them

E. Plants
1. How the type of area influences plants growing in it
   a. Grasslands
   b. Desert or semidesert
   c. Woodlands
   d. Swampy or marshy lands
   e. Croplands

2. How plants are fitted to the conditions about them
   a. Water plants
   b. Woodland plants
   c. Prairie plants
   d. Desert plants

3. Improvement of plants
   a. Wild species
   b. Cultivated and domesticated species

4. Uses of plants
   a. Direct values (review of work of previous grades, with addition of problems)
   b. Indirect values

F. Minerals
1. Types of rocks
   a. On basis of origin—igneous, metamorphic, sedimentary
   b. As we see them now—limestone, sandstone, shale, granite, marble, quartzite, chert, flint
   c. Places in Kansas where these kinds of rocks are found
2. Uses of rocks
   a. Fences and fence posts
   b. Buildings and foundations for buildings
   c. Road surfacing
   d. Cement manufacture
   e. Agricultural lime
   f. Changes in uses of rocks from pioneer times to the present
   g. Steps necessary in the conservation of rock resources

G. Miscellaneous
1. Clean up after picnics and school functions
2. Help keep roadsides free from litter; make litter bags for automobiles
3. History of conservation activities in Kansas

III. EVALUATION
A. Have the pupils furthered their feeling of responsibility for the future of our natural resources?
B. Have the pupils learned what the problems of conservation are in the home, school, and community?
C. Do they know what phases of conservation activity need the help of the state or Federal government?
D. Have the pupils begun the development of a wholesome and mature outlook on the problems of wildlife management?
E. Have they developed desirable general attitudes toward wise use of resources?
F. Have the pupils recognized the importance of laws or regulations in conservation?
C. Have they begun to realize that effective conservation depends on the cooperation of many individuals and agencies?
H. In their daily lives, do the pupils' behavior patterns indicate an understanding of, and sympathy for, the principles of conservation?

From Our State Department
The following quotations are from A Curriculum Guide for the Elementary Schools of Kansas, published by the State Department of Public Instruction in 1956. The first is from a table (page 119) entitled “Overview of the Elementary School Social Studies Program” and is the part dealing with conservation. The table is in the form of statements on achievements—i.e., “what the child should do and know, in addition to the previous year’s work, at the end of the year to be fully up-to-date.”
Kindergarten—“Have some concept of waste and careful use of things.” First Grade—“Show ability to appreciate and develop habits to conserve life and property.” Second Grade—“Understand need for conservation in home, school and community.” Third Grade—“Know concrete reasons for some conservation measures imposed by larger communities.” Fourth Grade—“Secure a growing respect for all precautions and regulations imposed.” Fifth Grade—“Take a practical approach to such problems in all countries studied.” Sixth Grade—“Understand how living standards are influenced by the use of natural resources.”

The second quotation consists of the statement on conservation on pages 123 and 124 of the Curriculum Guide—a gen-
eral statement concerning conservation in the social studies program.

"In recent years federal and state governments are showing concern over the waste and rapid depletion of natural resources. Concern for future generations demands that education, industry, and government cooperate to correct errors of the past.

"Education and legislation are recognized as the logical agencies to remedy the existing destruction of natural resources. However, since the causes of the destruction are deeply rooted in the habits, attitudes, and institutions which comprise our culture, education of the public is essential before legislation can become effective.

"The schools have the responsibility of making citizens aware of the resources upon which they depend for survival, and every administrator and teacher has a share in this responsibility.

"Many county superintendents, as well as local superintendents and elementary principals, are giving increasing attention to educating children in local environments to the needs of the community, state, and nation. The elementary schools help identify the conservation problems and develop ways and means of incorporating conservation into the school curriculum.

"The program in conservation education will necessarily vary from one elementary school to another. The following suggestions should be generally useful in planning a conservation program:

"The success of the program depends largely upon the initiative of county superintendents and elementary principals in arousing the interest of parents, pupils, and teachers in promoting the cooperation of outside agencies, and in providing the organization for cooperative planning and evaluation of the program.

"Conservation education cannot be appropriately confined to any one subject or field. The social studies, science, health, and the practical arts provide opportunities for developing understanding and appreciation of the conservation problem.

"The elementary concepts of conservation can be understood and appreciated by very young children.

"Basic materials which can be organized for instructional purposes are available from science textbooks, State Department of Public Instruction Guides, governmental documents, and private and commercial sources.

"Field trips, experiments, and the use of audio-visual resources are excellent devices for making concepts more meaningful and for relating conservation education to daily living in the community.

"Conservation education should have an important place in programs of in-service education of teachers.

The third quotation is from the Kindergarten-Primary and Intermediate portions of a table (page 139) entitled "Overview of the Elementary School Science Program." It will be noted that much of the table includes basic conservation concepts for each grade.

Kindergarten and First Grade

"The child should experience an informal introduction to the earth as of sand, rocks, and soil, with air around it, supporting plants and animals, having seasons and precipitation forms ... to all living things, classed as plants or animals only, needing sunlight, water, food, being interdependent with animals having young and needing kindness; and also to man's use of machines and his ability to control his surroundings."

Second Grade

"The child should understand that air is everywhere and needed for combustion, that rocks have use, that water dissolves some things, that plants and animals are influenced by seasons and weather ... that light comes from oil, sun, etc., ... learn that plants and animals differ in structure, that animal's eating habits vary and that man gets food from certain animals; know certain animals live together and care for their babies ..."
Third Grade
“... that many things give heat and light... understand plants and animals have basic differences and experience changes; and know man holds some control over energy, machines, and environment.”

Fourth Grade
“... the basic forms of water with importance and prevalence; ... increase knowledge that living and non-living things are alike and differ and that the growth processes bring new needs and changes ... and understand several needs for natural resources conservation.”

Fifth Grade
“... know the interrelationship of plants and animals; have basic knowledge of annual, perennial, evergreen, and deciduous plants; know that certain animals adapt to environment; identify better known birds... know that matter in various states and energy in various forms are used by man to advantage; and increase his knowledge as to how to conserve the nation’s resources and why.”

Sixth Grade
“... have more knowledge of reproduction of living things, of the growth, dispersion, and effect of germs; know the earth reveals the living past; and understand more of man’s use and dependency on electricity, and the development of audio, visual, and aero instruments.”

The curriculum guide includes similar statements and tables in other fields, too many to quote here, which indicate that the field of conservation can enter into many elementary school subjects. The guide is available for $1.00 a copy (75 cents a copy in lots of 10 or more) from the Textbook Division, State Department of Public Instruction, Topeka, Kansas.

COUNTY MAPS—A new series of one-half inch scale county maps, (Vol. 4, No. 1) are now available from the State Highway Commission. Maps are now 25 cents each or $20 per set.

From the Committee
Our purpose in developing this outline of conservation teaching has been to give the elementary teacher a basis from which to start his teaching on conservation, which, though quite important, has been but sketchily provided for in the regular curriculum. Knowing that most conscientious teachers include conservation in their classes, often without calling it by name, and sometimes even without realizing that they are teaching conservation, we have hoped that this guide, if followed, might prevent reteaching the same area to the same child in several grades, and completely skipping other areas of equal importance and interest.

This issue of The Kansas School Naturalist presents our attempt to map out areas of conservation, according to the needs and interests of pupils and in line with their ability to comprehend the problems and to apply solutions. In this regard we have tried to be consistent with the suggestions made in the publications of the State Department of Public Instruction—Studies in Social Living (1951), Making Elementary Science Meaningful (1953), and A Curriculum Guide for the Elementary Schools (1956)—and in An Outline for Teaching Conservation in Elementary Schools (1955), issued by the Soil Conservation Service, U.S. Department of Agriculture, Bulletin PA-268, Washington, D.C. The file on teaching materials from various states, in the Department of Bi-
ology of the Kansas State Teachers College of Emporia, was entirely available to the committee, and many of our suggestions were found in the guides and programs of other states. We have tried to make our suggestions fit the Kansas scene; for example, the conservation of water is more important in Kansas, and forests are less important in Kansas, than is true in many other states. Grasslands, which are not even mentioned in the programs of some states, are among the most important resources of Kansas.

We could not go into detail in this outline, mainly because of lack of space. We also realize that, because of the nature of the subject, the needs of each teacher and each class will vary so widely that each teacher must fit the subject in as it applies in his own school and community.

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Plan Now To Attend
THE 1958 WORKSHOP IN CONSERVATION

First Section – Three Weeks
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Water, soil, grassland, and wildlife conservation, with emphasis throughout on conservation education. Such topics as geography and climate of Kansas, water resources, soil erosion problems and control, grass as a resource, bird banding, wildflowers of Kansas, conservation clubs, and conservation teaching at various levels. Lectures, demonstrations, discussion groups, films, slides, models, field trips, projects, and individual and group reports. Open to any interested person.

Second Section – Three Weeks
June 23 to July 11, 1958
Credit – 1, 2, or 3 hours for 1, 2, or 3 weeks
Graduate or Undergraduate
This section will be open only to those who have completed the work of the first section, have been enrolled in a previous workshop in conservation, have completed a college course in conservation, or have done some type of field work or writing in the field of conservation. For this section the program is determined by the students, and the entire time will be devoted to the production of teaching aids for conservation education. The specific topics and levels covered will depend on the interests, experience, and needs of the group. It is likely that a considerable portion of the time will be spent in the preparation of materials that can be distributed to interested teachers throughout the state.

Further details will appear in the next two issues of The Kansas School Naturalist; for other information about the Workshop, write C. F. Gladfelter, Department of Biology, Kansas State Teachers College, Emporia, Kansas.