

Kansas Environmental Literacy Plan



2010



KACEE

KANSAS ASSOCIATION FOR
CONSERVATION &
ENVIRONMENTAL
E D U C A T I O N

The creation of the Environmental Literacy Plan for Kansas was a comprehensive undertaking that involved hundreds of hours of work on the part volunteers from across the state who care about Kansas and our long term efforts to sustain our state's natural resources and preserve our quality of life. They are committed to the importance of environmental literacy achieving these goals.

In addition to these volunteers, we wish to thank the following people and organizations for their leadership and vision that helped guide the process in Kansas:

- Gary Flory, Kansas Institute for Peace and Conflict Resolution
- Linda Rhoads, Environmental Education Association of Oregon *(formerly)*
- The North American Association for Environmental Education
- The No Child Left Inside Coalition
- Kansans for Children in Nature



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INTRODUCTION: ENVIRONMENTAL EDUCATION IN KANSAS

What is Environmental Education?

Environmental education may best be defined as a **process** directed at creating **awareness and understanding about environmental issues which lead to responsible individual and group actions**. Successful environmental education focuses on processes that promote critical thinking, problem solving, and effective decision-making skills. Environmental education utilizes processes that involve students in observing, measuring, classifying, experimenting, and other data gathering techniques. These processes assist students in discussing, inferring, predicting, and interpreting data about environmental issues. **Environmental education is not environmental information**. Environmental information is providing facts about specific environmental issues or problems. **Environmental education is not environmental advocacy**. Quality environmental education concentrates on the educational process. It is non-biased and science-based.

Who is the Kansas Association for Conservation and Environmental Education (KACEE)?

The Kansas Association for Conservation and Environmental Education (KACEE) is the umbrella organization for environmental education in the state of Kansas. Comprised of more than 300 organizations and 250 individuals, KACEE's vision is an environmentally literate Kansas citizenry, with KACEE as the recognized leader of the state's conservation and environmental education network. The mission of the organization is to promote and provide effective, non-biased and science-based environmental education to all Kansans. KACEE provided leadership for the development of the Environmental Education Standards for Kansas, the Environmental Education Plan for Kansas and now the Kansas Environmental Literacy Plan.



“(Being) environmentally literate means having an awareness of the relationship between the environment and human life. Environmentally literate people have appreciation for the environment and take action to help preserve it.”

Chelsie Waller, Goddard High School Student

THE ENVIRONMENTAL LITERACY PLAN FOR KANSAS

The **Environmental Literacy Plan for Kansas (ELPK)** is the culmination of many dedicated individuals representing public schools, non-formal environmental education providers, government agencies, businesses, colleges, universities and resource agencies throughout the state to develop a comprehensive plan for advancing environmental literacy in the state. Through the efforts and vision of all partners, Kansas is one of only a few states to have a ***plan that insures our Kansas children gain the knowledge, attitudes, skills necessary to become citizens who make informed and responsible personal and collective decisions and choices about our environment and its natural resources.***

What is Environmental Literacy?

The Partnership for 21st Century Skills defines an environmentally literate student as one who is able to:

- Demonstrate ***knowledge and understanding of the environment*** and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water and ecosystems
- Demonstrate ***knowledge and understanding of society's impact on the natural world*** (e.g., population growth, population development, resource consumption rate, etc.)
- Investigate and analyze environmental issues, and make accurate conclusions about effective solutions
- ***Take individual and collective action towards addressing environmental challenges*** (e.g., participating in global actions, designing solutions that inspire action on environmental issues)

The Campaign for Environmental Literacy defines environmental literacy as:

- The capacity of an individual to ***act successfully in daily life on a broad understanding of how people and societies relate to each other and to natural system*** and how they might do so sustainably.
- ***Awareness, knowledge and skills in order to incorporate appropriate environmental considerations into daily decisions*** about consumption, lifestyle, career, and civics and to engage in individual and collective action.
- ***A fundamental understanding of the systems of the natural world and the interactions between the living and non-living environment***
- The ***ability to make responsible decisions based on scientific, economic, aesthetic, and ethical considerations***
- The ***confidence and motivation to exercise rights and responsibilities as a member of a community***

How was the Kansas Environmental Literacy Plan Created?

Kansas is one of the first states to undertake the development of the Environmental Literacy Plan. Kansas has an extensive background and history in Environmental Education and is viewed as a national leader in environmental education. Kansas' environmental education organization was established in 1969, earlier than most states. In 2006, Kansas was also among the first states to develop an Environmental Education Plan for Kansas. In 2009, Governor Kathleen Sebelius issued an Executive Order creating the **Kansans for Children in Nature (KCN)** (<http://kcn.ksoutdoors.org>). The KCN was created to foster Kansas youth's appreciation, understanding and involvement with the outdoors. The Kansas Coalition for Children in Nature will promote outdoor learning experiences and environmental education for the young people of Kansas and provide ongoing support for these endeavors.



"Kansas must renew its efforts to ensure that its children have abundant opportunities to connect with the places they live and grow, to become informed and responsible stewards of the environment, and who are prepared for future environmental challenges and opportunities as individual citizens and as members of the workforce."

Kansas Executive Order, April 2009

Kansas was also among the first to support of the **No Child Left Inside Act** which proposed to amend the Elementary and Secondary Education Act to include environmental education (<http://www.govtrack.us/congress/bill.xpd?bill=h111-2054>). Sixteen Governors from across the country signed onto a letter sent to U.S. Department of Education Secretary, Arne Duncan. The letter states, "As governors, we view environmental education as critical to the future success of our children." The letter urges Secretary Duncan as revisions are made to the Elementary and Secondary Education Act to "incorporate the No Child Left Inside Act and collaborate with the Department of the Interior to identify available resources to facilitate this endeavor. In our view, this should be a top priority." **Governor Parkinson was among the first of the governors to sign onto this letter.**

In 2008, Kansas received a grant from the Environmental Protection Agency to create a group of individuals from four states (Kansas, Iowa, Nebraska and Missouri) charged with developing an Environmental Literacy Plan for each of the states. The Environmental Literacy Summit took place in Nebraska City, NE in July, 2009. The Summit lasted three days and was the baseline for each state and its stakeholders to envision what their state's Environmental Literacy Plan would include. **Based on guidelines developed by the North American Association for Environmental**

Education (NAAEE) which outlines key components of a state environmental literacy plan, Kansas established three writing teams, each focused on drafting a component of the plan. The writing teams developed draft plans to address the following broad questions: a) What **education** needs to take place in the K-12 setting for our Kansas students to become environmentally literate, b) what **professional development** and support do Kansas K-12 educators need to be successful in providing these educational experiences for students and c) what elements within the **school environment** facilitate environmental literacy? Through the hard work, research and time of these individuals, our state is proud to be among the first states in the country to unveil our Environmental Literacy Plan for Kansas.

Who Drafted the Environmental Literacy Plan for Kansas?

The Kansas Writing Team was recruited and selected to represent a broad range of perspectives including those of **state natural resource agencies, agriculture, education, conservation-related organizations and business and industry**. The following individuals dedicated a considerable amount of volunteer time in drafting this plan:



- Schanee' Anderson- Sedgwick County Zoo
- Melissa Arthur- Kansas Association of Conservation and Environmental Education
- Jared Bixby- Curator of Education from Sunset Zoo
- Tonya Bronlewee, Sedgwick County Research and Extension
- Pam Collinge, Middle School Science Educator, Eureka Public Schools
- Lindsey Douglas- Kansas Department of Agriculture
- Laura Downey- Kansas Association of Conservation and Environmental Education
- Gary Flory, Kansas Institute for Peace and Conflict Resolution
- Keri Harris- Franklin County Conservation District
- Jordan Martincich- Pheasants Forever
- Sondra Megrail- Kansas Department of Health and Environment
- Elyzabeth Navarre- Educator from Starside Elementary
- Gina Penzig- Westar Energy
- Mike Rader- Kansas Department of Wildlife and Parks
- Maureen Ruhlman- Kansas Department of Health and Environment
- Jean Schnellbacher, USD 501 Topeka Public Schools
- Denise Scribner– High School Teacher, Goddard High School
- Anne Snyder, YMCA Camp Wood
- Janet Waugh– Chair, Kansas Board of Education
- Rachel Wahle- Kansas Association of Conservation and Environmental Education
- Shari Wilson- Kansas Association of Conservation and Environmental Education

Who Reviewed the Environmental Literacy Plan for Kansas?

To create broader involvement, the Environmental Literacy Plan for Kansas was reviewed by leaders in the fields of education and natural resources. Our sincere gratitude for the following people who volunteered their time and voice in the development of this plan:

- Dane Baxa, Coordinator E.A.R.T.H., Sedgwick County Extension
- Emily Blank, 7th/8th Grade Science Teacher, Thunder Ridge Middle School
- Tonya Bronlewee (Co-Chair), KSU Extension, Sedgwick County and EE Workgroup Co-Chair
- Mary Clark, Naturalist, Dillon Nature Center
- Pamela Collinge, 6th Grade Science Teacher, Marshall School
- Laura Downey, KS Association for Conservation and Environmental Education
- Dr. David Dziewaltowski, Dept. Head; Physical Activity and Public Health, Kansas State University
- Bronwyn Fees, Kansas State University, Family Studies and Human Services
- Cathy Gray, Director, KS Healthy Kids of Kansas Childcare Aware
- Chaille Hay, Educator, Sedgwick County Zoo
- Linda Jones, Girl Scouts of Kansas Heartland Program Services Manager
- Mandy Kern, Agriculture Science Education, Hiawatha High School
- Chris King, USD230 School Board
- Jill Lloyd, Science Instructor, Mill Valley High School
- Michele McNulty, Fish & Wildlife Biologist, US Fish & Wildlife Service
- Evelyn Neier, Coordinator Junior Master Gardener Curriculum
- Dennis Newell (Co-Chair), Albert Einstein Distinguished Educator, National Science Foundation
- Pam Paulsen, Horticulture, Reno County Extension
- Cherie Riffey, KS Department of Wildlife and Parks
- Jeannie Schnellbacher, Consulting Teacher for K-8 Science, USD 501 Topeka
- Anne Snyder, Camp Wood YMCA Camp
- Adrienne Walker, Kansas State University Clinical Instructor, Manhattan High School
- Ken Wold, Camp Wood YMCA Camp

"I promise you that we will be a committed partner in the national effort to build a more environmentally literate and responsible society...Right now, in the second decade of the 21st century, preparing our students to be good environmental citizens is some of the most important work any of us can do. It is for our children, and our children's children, and generations yet to come."

(US Secretary of Education, Arne Duncan, September 2010)

Why is it Important to have a Kansas Environmental Literacy Plan?

Nature-deficit disorder is not an official diagnosis but a way of viewing the problem, and describes the human costs of alienation from nature, among them: diminished use of the senses, attention difficulties, and higher rates of physical and emotional illnesses. The disorder can be detected in individuals, families, and communities (Louv, 2005).

In Richard Louv's book, *Last Child in the Woods* (2005), he coins the phrase "nature deficit disorder." What Louv is referring to is the increased lack of contact our children have with nature and the resulting consequences on the social, cognitive and physical development and health of our children. According the Kaiser Family Foundation (2005), **our children are spending less than half the time out of doors that their parents did growing up.** Another longitudinal study

found that **children under 13 living in the United States spend on average only about half an hour of unstructured time outdoors each week** (Hofferth & Sadberg, 2001). It is clear that our children today spend much more time indoors than they do outdoors and some believe this is leading to some significant impacts. Louv (2005) cites research to suggest that this emerging “nature deficit disorder” among our children is linked to epidemic rises in childhood obesity, increasing social and cognitive delays as our children enter the school systems and rises in diagnoses of Attention Deficit/Hyper-Active Disorder (ADHD).

Numerous benefits are associated with providing children with outdoor experiential activities and environmental education. The following are some of the key benefits of providing children with outdoor experiences and learning that are supported by research:



- **Studying EE Creates Enthusiastic Students, Innovative Teacher-Leaders** - EE offers opportunities for rich, hands-on, real world and relevant learning across the curriculum (Archie, 2003).
- **EE Helps Build Critical Thinking, and Relationship Skills** - Environment-based education emphasizes specific critical thinking skills central to “good science”—questioning, investigating, forming hypotheses, interpreting data, analyzing, developing conclusions, and solving problems (Archie, 2003).
- **EE Instructional Strategies Help Foster Leadership** Qualities - Environmental education emphasizes cooperative learning (i.e., working in teams or with partners), critical thinking and discussion, hands-on activities, and a focus on action strategies with real-world applications (NAAEE & NEETF, 2001). EE provides opportunities for students to develop and practice leadership skills such as:
 - ⇒ Working in teams
 - ⇒ Listening to and accepting diverse opinions
 - ⇒ Solving real-world problems
 - ⇒ Taking the long-term view
 - ⇒ Promoting actions that serve the larger good
 - ⇒ Connecting with the community
- **EE Schools Demonstrate Better Academic Performance across the Curriculum** - Schools which adopt environmental education as the central focus of their academic programs fre-

quently demonstrate the following results (Lieberman & Hoody, 1998; NEETF, 2000; Archie, 2003):

- ⇒ Reading, science, social studies, and mathematics scores improve.
- ⇒ Students develop the ability to transfer their knowledge from familiar to unfamiliar contexts.
- ⇒ Students “learn to do science” rather than “just learn about science.”
- ⇒ Classroom discipline problems decline.
- ⇒ All students have the opportunity to learn at a higher level.

- **Self Control/Self Discipline Benefits for Children with ADD/Inner City Youth**

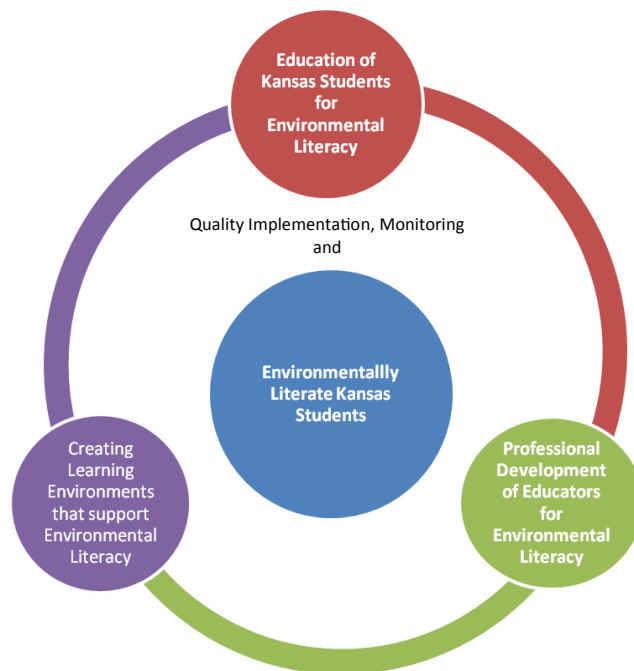
- Taylor and her colleagues found that children with attention-deficit disorder (ADD) benefited from more exposure to nature –the greener a child’s everyday environment, the more manageable are the symptoms of ADD (Taylor, 2001). Taylor also observed that access to green spaces for play, and even having views of green settings, enhances peace, self-control, and self-discipline among inner-city youth, especially among girls.



- **Increased Focus/Improved Cognition** - Wells observed that proximity to nature, access to views of nature, and daily exposure to natural settings increases the ability of children to focus and improves cognitive abilities. (Wells, 2000).
- **Health Benefits** - At the school environment level Bell and Dymont observed that children who experience school grounds or play areas with diverse natural settings are more physically active, more aware of good nutrition, more creative, and more civil to one another (Bell, 2006).
- **Development of Positive Social Skills** - Play in diverse natural environments reduces or eliminates anti-social behavior such as violence, bullying, vandalism, and littering and reduces school absenteeism. (Coffey, 2001; Malone, 2003; Moore, 2000).
- **Conservation Benefits** - Higher levels of environmental knowledge correlate significantly with a higher degree of pro-environment/conservation behavior. The more people know, the more likely they are to recycle, be energy efficient, conserve water, etc. (NEETF, 2005).

Scope of the Kansas Environmental Literacy Plan

The Environmental Literacy Plan for Kansas addresses **three comprehensive goals** toward preparing Kansas students to become environmentally literate citizens. Embedded within each goal are plans for quality implementation, monitoring and evaluation. The plan outlines major goals, background information and research related to the goals, and key objectives and strategies designed to support achievement of the broad goals. Also, when appropriate, real world examples designed to bring the ELPK “to life” are included. The following outlines the goals and sub-goals addressed within the ELPK:



1. Addressing Education of Kansas Students for Environmental Literacy
 - a. Content standards, courses (board of regents), subjects
 - b. HS Graduation requirements
 - c. Student assessment of Environmental Literacy
 - d. Monitoring Process/Evaluation/Plan Revision
2. Professional Development of Educators for Environmental Literacy
 - a. Teachers
 - b. Non-Formal Educators
 - c. Monitoring Process/Evaluation/Plan Revision
3. Creating Learning Environments for Environmental Literacy
 - a. Outdoor Classrooms
 - b. Green Schools
 - c. School Facilities and Grounds
 - d. Community learning environments
 - e. Monitoring Process/Evaluation/Plan Revision
4. Insuring Quality Implementation, Monitoring and Evaluation of Plan
 - a. KSDE/KSBE
 - b. Other Agencies and supporters
 - c. Securing Funding and Support
 - d. Monitoring Process, Evaluation and Plan Revision

Goal 1: Addressing the Education of K-12 Students for Environmental Literacy

Background and Rationale:

For over ten years, the National Environmental Education Foundation has conducted surveys of American adults, testing their basic knowledge about the environment. *Environmental Literacy in America*, a summary of ten years of findings published in 2005, reveals that most Americans are environmentally illiterate, scoring on average about 3 out of 10 questions related to basic environmental understandings correct (<http://www.neefusa.org/pdf/ELR2005.pdf>). In a time when environmental concerns are increasingly complex, these reports create a clear and compelling case that we must intensify our efforts to insure an environmentally literate society that is capable of making informed and responsible individual and collective decisions about the environment.

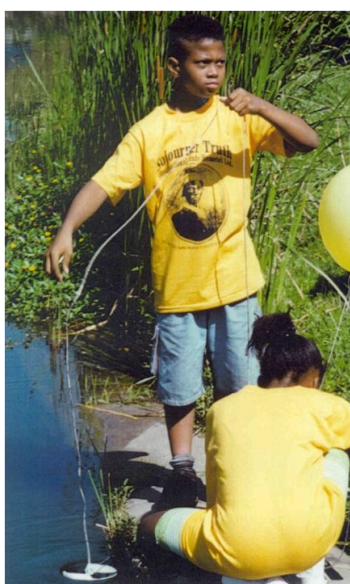
The Environmental Literacy Plan for Kansas (ELPK) is built upon a strong foundation of work to promote environmental literacy at the state and national level. In Kansas, previous work that supports the ELPK includes the Environmental Education Standards for Kansas (<http://www.ksde.org/Default.aspx?tabid=3511#eeStd>) which outline standards for teaching about the environment in K-12 settings and which were adopted as non-assessed standards for the state of Kansas by the Kansas State Board of Education in 2000. Also relevant to the development of the ELPK is the Environmental Education Plan for Kansas (<http://www.kacee.org/ee-plan-ks>) which was developed in 2006 by a broad-based coalition of supporters to advance EE in K-12 classroom. Further guidance for the ELPK includes support for teaching in the outdoors found in the Kansas Science Education Standards (2008), which includes the following statement about implementation of the science standards in Kansas:

*Many Kansans now live in environments where nature seems irrelevant, except as entertainment, and the economy dominates our priorities. Current economic trends are based less on production and more on consumption; so often nature and nature's services are valued less. In some respects, humans at the dawn of the species probably knew more about the natural world than does the average Kansas citizen of today. The rise of civilization and more recent increase in urbanization has been paralleled by decreasing personal contact with the natural world. Despite the fact that we are a part of a highly interconnected web of life, the separation of so many people from direct contact with nature has had enormous consequences. The accumulating research reveals the necessity of contact with nature for healthy child development. **Varied experiences in the outdoors make natural processes less abstract and are critical to developing scientific literacy.***

*Two authors who describe the importance of children, youth and young adults having direct experience in the out-of-doors are Gary Paul Nabhan and Stephen Trimble in *The Geography of Childhood: Why Children Need Wild Places* (Beacon Press, 1994) and Richard Louv, in his recent book, *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder* (Algonquin Press, 2005). (<http://www.ksde.org/Default.aspx?tabid=144>)*

More recently, this plan is guided by the Executive Order issued by Governor Kathleen Sebelius which establishes the Kansas Coalition for Children in Nature, created to foster Kansas youth's appreciation, understanding and involvement with the outdoors. The Executive Order, issued in April of 2009, calls for the creation of an Environmental Literacy Plan for Kansas. This order has been supported by Governor Parkinson (<http://www.kacee.org/kansas-coalition-children-nature>).

At the national level, the ELPK is informed by the National Project for Excellence in Environmental Education, a series of guidelines developed by the North American Association for Environmental Education which provide a construct to insure excellence in the preparation of environmental educators, EE programs and materials and EE learning in formal and informal settings (<http://www.naaee.org/programs-and-initiatives/guidelines-for-excellence/>). In addition the ELPK creates a tie The Partnership for 21st Century Skills which has identified five 21st Century Interdisciplinary Themes essential for preparation of students for the 21st Century. Included in those themes is environmental literacy and it is emphasized that, "schools must move beyond a focus on basic competency in core subjects to promoting understanding of academic content at much higher levels by weaving 21st century interdisciplinary themes into core subjects" (http://www.p21.org/index.php?option=com_content&task=view&id=57&Itemid=120). As Kansas is a 21st Century State, this provides a critical link to EE in Kansas classrooms.



"(Being) environmentally literate means having an awareness of the relationship between the environment and human life. Environmentally literate people have appreciation for the environment and take action to help preserve it. "

Chelsie Waller, Goddard High School Student

Goal 1 (CORRESPONDS WITH SCOPE 1a and 1b): Kansas high school graduates are prepared to be successful in post-secondary, career and life opportunities as environmentally literate citizens who:

- develop attitudes of appreciation and concern for the environment
- take individual and collective action toward addressing environmental challenges in their every day choices

Structural Components that support environmental literacy education and achievement in K-12 classrooms:

- curriculum content standards
- curriculum content areas
- high school graduation requirements
- curriculum courses or subjects

Key Objective 1:

At least 90% of the Environmental Education Standards for Kansas benchmarks (<http://www.kacee.org/standards>) are evidenced in assessed indicators of core curriculum testing for K-12 students by 2015.

Key Strategies:

- a. Explore who is working on the National Core Competencies
- b. Review/compare core standards and EE standards and determine the integration and gaps (assessed indicators)
- c. Identify key EE indicators that we want to have assessed.
- d. Establish timeline of current standards revisions. Insure that an environmental educator is on every standards writing committee. Where gaps exist, work with EE on standards committees to revise for inclusions. (recommendations for sample questions for state assessments for environmental literacy)

Connecting Core Standards with Environmental Education: USD 389

Eureka, Kansas

As a way of integrating technology and science, sixth grade students in Eureka go on an iPod scavenger hunt looking for abiotic and biotic examples found within their outdoor classroom. This is correlated with the Kansas State Science Standards: S.7.3.4.1, S.7.3.5.2: The student recognizes that all populations living together (biotic resources) and the physical factors (abiotic resources) with which they interact compose an ecosystem. The student understands that adaptations of organisms contribute to biological diversity. This also correlates with Kansas Environmental Education Standard: Sixth grade, Standard 1, Benchmark 4--The student will link non-living parts of the environment with living portions of the ecosystem.



Aaaa! this is a hard life being recycled and all. SO stressful SO smashing. I have almost been dumped in a wast basket! My can was dumped in a wast basket he went to a land fill and He said it was awful, until a nice man came along and picked him up and said "we can recycle this one" so he went back to the recycle Prosses.

So what shoud I do whith my life? hmmm... I know! I could be a hero like super can! but I dont have anny powers. hmmm yes that it I could work at the factory and recycle like when I saw a can working at the recycling center!

oh I'll go try out for the job wish me luck!

First grade students at Starside Elementary write about their life as aluminum can. The integration of environmental education with core subject areas helps to support achievement of benchmarks for learning outlined in the Kansas Reading and Writing Standards.

Key Objective 2:

Develop 2-3 instructional examples related to environmental education/literacy for each corresponding assessed indicator and provide to the KSDE for their website as supporting documents to the standards by 2012.

Key Strategies:

- Assemble a team of educators that will review the current instructional examples and the EE Standards for Kansas.
- Identify current examples that could be replaced with EE related examples.
- Team will develop the instructional examples for inclusion within the core content standards.
- Provide examples to representative on standard writing committees as appropriate.

- e. Gather real life examples of successful ways EE has been incorporated into school or district educational offerings. Provide these examples as a part of KSDE website or linked to KSDE website.
- f. Use a model like state of Washington that correlates EE activities/ applications that correspond to math and reading standards (interdisciplinary standards).

Key Objective 3:

Partner with KSDE to include EE instructional resources within the Instructional Resources page on the Careers, Standards and Assessment Services/Instructional Resources page on the KSDE website by 2014.

Key Strategies:

- a. Assemble a team teachers and environmental educators that represent all parties involved in delivery of education to students (grade level, different content areas, special education, alternative high schools, urban/rural settings, and non-formal educators) and determine needs of educators for instructional resources.
- b. Coordinate existing resources to provide lesson plans and web-based resources for environmental education classroom instruction that are integrated across curriculum and tied to the state standards assessments and that address the diverse needs of different learners and learning settings. Potential Models for resources: State of Michigan for environmental literacy goals <http://edr1.educ.msu.edu/EnvironmentalLit/index.htm>. Use Kan-Ed using “Test Builder” to write formative probe questions and have students respond to it online and align activities that address the skill and post tests for students on “Test Builder” as a means to assess constructive responses and assess progress toward environmental literacy. Connect activities to Project Learning Tree, WET, WILD and Aquatic.
- c. Include information on funding opportunities that support EE in schools and establish a communication network to distribute those opportunities (through the Green Schools Network).
- d. Work to insure that funding is restored for EE through the KSDE/KSBE for KACEE and pursue other dedicated funding to support EE in Kansas classrooms.
- e. Work with KSDE to get resources on the KSDE website or linked to where they are available. Explore multiple avenues of access to resources and promote the availability of the resources.
- f. Gather feedback from those educators who are using the resources with a web-based mechanism for providing feedback and making suggestions for changes or additional resources. Provide blog/community opportunity through KS Green Schools website. Revise/update resources as needed.

Instructional Resources that Connect Careers with Environmental Education: Appanoose Elementary and the Franklin County Conservation District



Appanoose Elementary School partnered with the Franklin County Conservation District to start a program called *Water Wednesdays*. The program was designed as a six-week series to introduce students in grades K-5 to various hands-on learning activities focused on water quality and non-point source pollution. Students had the opportunity to learn from field professionals about water and water-related careers. Here, students explore the Soil Tunnel Trailer and learn about soil and soil conservation with conservation district staff.

Key Objective 4:

Work with the Kansas Board of Regents to include one unit of environmental education as an approved qualified admissions statute in precollege curriculum (required for admission to state regents institutions), in accordance with HCR 5004. Environmental education will be included under the curriculum specifications for Natural Science as one of the three approved units and/or under curriculum specifications for Social Studies (up to one unit selected from i.e. Current Social Issues) required for admissions into a Regent's Institution by 2015.

Key Strategies:

- a. Identify the process of approaching the Kansas Board of Regents with a request for an addition to the approved qualified admissions statute.
- b. Establish a working group (high school educators, high school counselors, college admissions/academic advisors, local school boards, Board of Education) that will develop and present a proposal to the KS Board of Regents. The proposal will outline the rationale, methodology and impact of including EE under the curriculum specifications for Natural Science as one of the three approved units and/or under curriculum specifications for Social Studies (up to one unit selected from i.e. Current Social Issues) required for admissions into a Regent's Institution.
- c. Develop and deliver a comprehensive presentation to local boards of education that promotes the inclusion of EE as a qualified approved unit for QAS.
- d. Develop an inservice program (via asynchronous webinar) that is available for elementary through HS Departments that guides faculty through the process of integrating EE without increasing workload.

Key Objective 5:

Enhance the connection to Route 21, the Kansas [21st Century Skills initiative](#) that promotes using environmental literacy as an integrating theme for preparing Kansas students for the 21st Century through assessments of environmental literacy, teaching "maps", documentation models and recognition by 2015.

Key Strategies:

- a. Determine how/if 21st Learning Skills will be assessed and use data to assess progress toward environmental literacy in Kansas.
- b. Develop a “map” for environmental literacy (based on EE Standards for KS) similar to the ICT maps provided for subject areas at K-2, 3-5, 6-8, 9-12 grades (http://www.21stcenturyskills.org/images/stories/matrices/ictmap_science.pdf).
- c. Develop documentation models (e.g. student developed portfolios and test data through Kan-Ed) that demonstrate the integration of 21st Century learning skills into EE curricula, while supporting the common core standards. (Kan-Ed Empowered Desktop Backpack, students could upload examples of their computer projects that demonstrated that they have completed EE projects that integrate both 21st Century skills and common core standards—use products that teachers can use for examples, maybe some sort of web-based area for students and teachers to upload projects on the Kansas Green Schools page or www.pathfinderscience.org)
- d. Explore development of a recognition program of schools through Kansas Green Schools Program for classrooms and/or schools which are using EE to achieve 21st Century learning skills. These recognized teachers and schools will serve as a cohort group and resource for other teachers.
- e. Provide high quality professional development for K-12 educators on integration of EE, 21st Century and core curriculum
- f. Conduct research that explores AYP and teaching using EE. Work through colleges/universities and action research to develop a case for using EE in schools. (look at Technology Rich Classrooms as a model for collecting data/research and developing evidence base for EE).

Key Objective 6:

Establish environmental education as a listed alternative for the three credits of science required for graduation (like anatomy or honors biology) for Kansas High School Graduation Requirements identified by QPA which currently include three (3) units of science, which shall include physical, biological, and earth and space science concepts and which shall include at least one unit as a laboratory course by 2015.

Key Strategies:

- a. Build upon environmental science as a requirement for admissions into a regent institute to expand offerings to all high school students.
- b. Identify how environmental science courses can be identified as one of the three units of science that meet graduation requirements. Explore Agriculture courses for possible inclusion.
- c. Environmental literacy as a part of a Kansas career pipeline (refer back to 21st Century as a link).
- d. Work with high school guidance counselors to help students outline their course enrollments to include EE for successful graduation (2 and 4 year plans)
- e. Work with colleges of education to prepare teachers with endorsements for teaching environmental science in Kansas schools.
- f. Work with Kansas Green School district boards to include environmental literacy as a graduation requirement in the district. Explore online course and testing options and connections to 21st Century learning.

- g. Similar to the Presidential Environmental Youth Awards (www.epa.gov/peya), provide a recognition of students completing environmental literacy related coursework. Could use the information on the KS Green Schools website for documentation.

Meeting High School Graduation Requirements Using Environmental Education: Goddard High School

High school students are regularly engaged in hands-on investigations of their school wetland and surrounding area. Students use open inquiry approaches to conduct real life investigations of their outdoor classroom spaces as a part of their environmental science course. For instance, students tested water quality at their wetland, encountered less than ideal conditions for aquatic wildlife and problem-solved to find ways to increase dissolved oxygen levels within the pond through a wind-powered aeration system.



Long Range Vision for Goal 1: Students in Kansas attend schools where K-12 classrooms provide rich learning experiences, often in outdoor settings, that develop students' environmental literacy skills and support learning in core curricular areas. Environmental education is integrated in a variety of ways and Kansas students graduate from high school with the knowledge, skills, attitudes of appreciation and concern for long term sustainability necessary to take individual and collective action toward addressing environmental challenges in their homes, communities and beyond.

"I think that being environmentally literate means that you have a clear understanding of the relationship between nature and the human race, and then using that knowledge to better the environment and to preserving it."

Kayla Rodriguez, Goddard High School Student

Goal 2: Educator Professional Development for Environmental Literacy

(A description of programs for professional development of educators to improve their environmental content knowledge, skill in teaching about environmental issues, and field-based pedagogical skills.)



Background and Rationale:

Kansas has a long and rich history of supporting environmental education (EE) professional development (PD) to educators through a variety of partnerships, programs, and legislative action. In 1969, Kansas Association for Conservation and Environmental Education (KACEE) was established as one of the first EE organizations in the country with the purpose of promoting a full understanding of environmental issues through the educational process. From 1989-1995, KACEE established a statewide EE professional devel-

opment program to offer training in Projects Learning Tree, WILD, WILD Aquatic, and WET. Since beginning these EE professional development programs, KACEE has provided training for over 16,000 Kansas educators.

In 1971, the Kansas State Board of Education issued a policy statement on Environmental Education. The policy statement recognized the need to strengthen instruction on EE and encouraged the continuation and enhancement of EE, declaring it to have high priority in curriculum content and that the development and interdisciplinary teaching of environmental concepts appropriate to the age of the learner should be included throughout the educational process as expressed through a state plan (Kansas State Board of Education meeting minutes, 7 July 1971). In 1978, Kansas passed House Concurrent Resolution No. 5004 in support of environmental education in Kansas. The Resolution directs the Kansas State Board of Education to encourage, support and promote environmental education programs in Kansas school districts and directs the Kansas State Board of Regents to emphasize environmental awareness in teacher preparation programs (House Concurrent Resolution No. 5004, 1978 Session Laws, Ch. 459, p. 1743).

In 1998 & 2000, The Wichita State University Interdisciplinary Communications Research Institute completed a statewide survey for the KDHE Bureau of Waste Management of solid waste knowledge and attitudes in Kansas. In this study, 95% of respondents strongly agreed or agreed with the statement: "It is important that our local schools teach environmental education." (KDHE Statewide Solid Waste Management Survey Results, 1998).

In Kansas, a high degree of support for EE in schools can be found within the Department of Education, Board of Education, Kansas Legislature, and among the general public. Kansas educators enjoy a strong statewide EE organization and member network, and many excellent professional development programs already exist. Despite this support, Kansas has yet to truly integrate EE professional development into the formal education system, and develop a coordinated system to ensure that both formal and non-formal professional development programs are aligned with NAAEE Guidelines for Excellence. Though a wide variety of non-formal EE professional development opportunities are available state wide, many Kansas teachers are simply not aware of them. Many non-formal EE organizations have an interest in supporting teachers and EE programs in schools at higher level, but simply don't understand what is needed. Professional development

opportunities have typically been utilized by those educators who have a special interest in environmental education, often on their own time and dime. Lacking access to examples of the many ways in which EE can be integrated into and support efforts to address Kansas core curriculum standards, many teachers do not perceive that time is available in the school day to include EE.

The proposed goals, objectives, and strategies in this plan are designed to ensure that all EE professional development opportunities meet high standards of excellence, include examples and incentives to aid implementation, and are accessible and available to all Kansas educators.

Goal 2a: Formal Educator Professional Development

Formal educators (pre-kindergarten – grade 12, in-service and pre-service) in Kansas have in place a variety of professional development opportunities that (1) build environmental content knowledge; (2) develop pathways for integration into local curriculum; and (3) use best practices for quality environmental education. With these tools, educators will be better equipped to prepare students to be environmentally literate adults who can take individual and collective action towards addressing environmental challenges.

Key Objective 1:

Develop a “best practices” guidelines document for environmental education teacher professional development, including successful PD models, pedagogy, and practice by 2013.

Key Strategies:

- a. Develop models of successful EE Professional Development
- b. Identify key components of EE PD experience which includes understanding and applying best practices for EE (NAAEE guidelines for excellence) in the formal preK-12 classroom

Key Objective 2:

Increase content knowledge of EE among formal educators using the Guidelines for Preparation of Environmental Educators from NAAEE by 2012.

Key Strategies:

- a. Explore ways to build environmental content knowledge in pre-service science courses (colleges using NCATE certification has an EE component)
- b. Work with professional development/curriculum coordinators/departments to integrate EE opportunities into in-service PD (i.e. summer academies)
- c. Embed environmental content knowledge into EE master’s programs
- d. Increase environmental content instruction into EE professional development for both pre-service and in-service teachers
- e. Explore ways to make NAAEE Guidelines available/accessible to educators.
- f. Work to get regents institutions to offer EE advanced degrees for masters degree programs

- g. Work with the Department of Education to get an endorsement in EE so that educators may receive a “highly qualified” certification to teach EE

Professional Development: Formal and Informal Environmental Education Partnership, Sunset Zoo, Manhattan KS:

For a number of years, zoo staff has worked with the Science Methods classes at Kansas State University to deliver a class that highlights what informal educators can offer elementary, middle, and high school teachers. With Sunset Zoo’s expertise in environmental education and the professional development opportunities, programs like Project WILD and Project Learning Tree, were highlighted. This partnership between professors in a College of Education at a university and an environmental-based, informal science institution provides a framework for other institutions and universities to collaborate in building environmental content knowledge in pre-service science courses.



Key Objective 3:

Develop state guidelines for presentation to Kansas State Board of Education for adoption consideration which integrate EE content into a multi-disciplinary curriculum by 2014.

Key Strategies:

- a. Develop a Kansas-specific set of guidelines modeled after NAAEE Guidelines for Excellence
- b. Develop example frameworks for EE integration from Kansas

Key Objective 4:

Increase access, incentive and opportunities for formal educators to learn about and participate in professional development (ongoing).

Key Strategies:

- a. Coordinate marketing & distribution of EE professional development opportunities (through Green Schools enrollment, Online EE resources, KACEE membership, Partnerships with KSDE, Science list-servs, Ag Education list-servs, etc.) to ensure that educators are aware of all EE PD available.
- b. Identify and work to reduce geographical, financial, and time barriers to EE PD access
- c. Work with teachers at grassroots level to educate/inform board members, superintendents and administrators about the benefits of EE PD in their classrooms and schools
- d. Identify incentives for educators to participate in EE PD (PD credit, certifications, graduate credit, stipends, highly qualified cert. etc.)

- e. Assist PD providers with integrating incentives into each PD opportunity
- f. Inventory existing EE PD opportunities. Determine barriers to accessing opportunities and whether or not additional opportunities are needed.

Teacher Environmental Education Summer Institute, Rolling Hills Wildlife Adventure and Smoky Hills Education Service Center, Salina, KS

Rolling Hills Wildlife Adventure partnered with Smoky Hills Education Service Center in the late 1990's to develop a multiday teacher workshop each summer. The workshop is focused on environmental education and it's developed by the education staff at Rolling Hills Wildlife Adventure. Smoky Hills Education Service Center markets the workshop to all their member school districts across central and western Kansas through their newsletter and website. The workshop consistently reaches capacity through this marketing avenue.



Goal 2b: Non-Formal Educator/Formal Educator Program Integration

Non-formal educators (persons teaching outside the framework of the formal education system) in Kansas have in place a professional development system that supports their efforts to (1) provide quality professional development for formal educators; and (2) build on and enrich environmental education in the formal education system. Through this system, non-formal educators will build capacity and ensure relevance of programming and services by partnering with formal educators to achieve an environmentally literate citizenry.



Key Objective 1:

Increase by 50% the number of EE professional development programs and materials that are aligned with the NAAEE Guidelines for Excellence in EE to be offered by non-formal educators for formal educators by 2013.

Key Strategies:

Inventory existing professional development programs offered to formal educators

- a. by non-formal educators
- b. Conduct needs assessment with formal educators to determine where non-formal educators can best serve EE PD needs through programs identified in 1a above, and determine need for additional program development

- c. Develop a system of support to assist non-formal educators in aligning their EE PD programs with NAAEE guidelines for excellence and the needs identified in 1b.

Key Objective 2:

Assist non-formal educators to interpret state education standards and new initiatives in order to assist formal educators to integrate EE into a multi-disciplinary curriculum (ongoing).

Key Strategies:

- a. Initiate a task force/focus group comprised of representatives from both the formal and non-formal education systems to determine how best to correlate standards and new initiatives with EE.

Correlating Standards to Environmental Education: Kansas Association for Conservation & Environmental Education:

In 2010, KACEE's Education Committee convened the Early Childhood Environmental Education Corps, comprised of individuals representing KACEE Staff & Volunteer Facilitators, Early Childhood Educators, Early Childhood Service Providers, and Early Childhood Research Professionals in Kansas. The group's objective is to increase the capacity of KACEE and its partners to deliver early childhood environmental education in Kansas by developing a coordinated system to recruit, train and support workshop facilitators for two new EE programs (*Growing Up WILD* and *PLT Early Childhood Environmental Experiences*). Group members worked together to correlate these programs with relevant early childhood standards and certification programs. In addition, new facilitators as well as existing professional development provider networks are being utilized to offer trainings in a way that is relevant to educators with a variety of backgrounds.



- b. Develop tools for ongoing communication (website, power point, conference presentations, list-servs, etc.) to keep non-formal educators current on changes and new initiatives in the formal education system
- c. Develop case studies/provide examples of ways in which EE has been integrated into a multi-disciplinary curriculum

Key Objective 3:

Using Goal 2a Objective 1, develop a certification program for EE PD instructors to provide EE PD for formal educators in accordance with KSDE professional development standards by 2015.

Key Strategies:

- a. Review KSDE requirements for professional development & NAAEE Guidelines for Excellence to define certification criteria
- b. Design process & logistics for certification, ongoing maintenance , and continuing education requirements for re-certification

Example from Kansas Department of Health & Environment:



The Kansas Department of Health & Environment certifies program directors of a number of child care/school age programs. There are set minimum standards for program directors, like college credit and/or experience to receive their certification. They are then required to meet a certain number of continuing education hours or clock hours every year to maintain their program director certification. This is one example of a certification program within the state, and could be used as a base to start from.

- c. Explore avenues for certification to be recognized, accepted, valued by potential audiences (teachers, administrators, KSDE, KSBE, etc.)

Key Objective 4:

By increasing awareness of EE related opportunities/resources for professional development, at least 35% of certified PreK-12 educators participate in EE related professional development by 2015.

Key Strategies:

- a. Promote the use of existing websites, list-servs, etc. (KACEE, KS Green Schools, KS Science listserv, KATS, etc.) to market and distribute EE PD program information
- b. Explore avenues to offer EE PD through existing professional development providers (e.g. educational service centers, summer institutes, etc.)

Goal 2c: Non-Formal Educator Professional Development

Non-formal educators (persons teaching outside the framework of the formal education system) in Kansas have in place a variety of professional development opportunities that (1) assist them in providing quality environmental education; and (2) encourage the use of best practices for environmental education. As a result, non-formal educators will be better equipped to prepare audiences to be environmentally literate citizens who can take individual and collective action towards addressing environmental challenges.

Key Objective 1:

Increase awareness and understanding of NAAEE Guidelines for Excellence and their benefits to non-formal education programs among non-formal educators (ongoing).

Key Strategies:

- a. Assess what non-formal educators currently understand about the guidelines for excellence, and to what extent they are used
- b. Develop professional development tools (workshop, online resources, etc.) to address gaps identified in the above assessment

Key Objective 2:

Develop opportunities for self-evaluation of EE programs and materials for non-formal education programs and materials in order to increase the number of EE professional development programs and materials that are aligned with the NAAEE Guidelines for Excellence by 2014.

Key Strategies:

- a. Inventory existing resources offered by NAAEE (and also model programs in other states) for materials self-evaluation
- b. Explore what incentives/certification, etc. have been implemented in other states and determine what system might work best in Kansas
- c. Develop regional training opportunities (possibly based on training already developed by NAAEE) to instruct non-formal educators in the self-evaluation process
- d. Design a system of support to assist non-formal educators in implementing recommendations from the self-evaluation to improve the quality of their programs

Key Objective 3:

Expand and update infrastructure for ongoing professional development and networking to assist non-formal educators in staying current with new developments, initiatives, and best practices in the field of EE (ongoing).

Key Strategies:

- a. Identify components of existing infrastructure and resources for ongoing EE professional development
- b. Survey non-formal educators to understand ways in which they stay current, and where gaps exist
- c. Using information collected above, integrate existing tools and develop new tools (web-based, social networking, online learning, conference sessions, regional networks, etc.) to expand and update infrastructure

Long Range Vision for Goal 2:

A coordinated and collaborative system of EE professional development that maximizes the resources and potential of all Kansas schools and communities to produce high school graduates who are informed about and involved in their communities:

“graduates who know how to work collaboratively in the classroom and community to solve challenging environmental issues; graduates who can think critically and apply knowledge and skills learned in school to real world situations; graduates who know how to work with government, businesses, universities and non-profit organizations and who understand that every issue includes more than one perspective and set of values; graduates who actively demonstrate their civic responsibilities by participating in decision-making processes; graduates who, as adults, contribute to a strong and healthy society, environment, and economy.” – Washington State EE Plan



“I think that the test of environmental literacy is the ability of an individual to act successfully in daily life on an extensive understanding of how people and societies impact natural systems and what they might do so to sustain it.”

William Hinkle, Goddard High School Student

Goal 3: Learning Environments that Support Environmental Literacy

All schools in Kansas have access to, support for and the necessary resources to create a coordinated network of sustainable schools which foster active, engaging, hands-on and relevant learning experiences in classrooms, schoolyards and communities for students. These learning environments provide the infrastructure for achieving environmental literacy goals. Teachers, schools and school districts have access to diverse resources for creating high quality learning environments including technical assistance with curriculum connections and environmental stewardship projects, funding and professional networking that supports a community of learners.

Background/Rationale:

Building upon the information provided in Goals 1 and 2, it has become clear that the school environment can play an important role in supporting and reinforcing classroom learning. From school gardens and outdoor wildlife habitat areas to implementing environmental stewardship projects that can provide learning opportunities, the school environment is an often-untapped resource for teaching about the environment, career and technical education, and increasing the physical activity of students.

In the 2008 KS State Department of Education's "Profiles of the 21st Century Learning Environment," (<http://www.ksde.org/Portals/25/Profile%20Bullets%2011-3-2008%20markup%20v5.pdf>) an emphasis is placed on structuring learning environments that foster positive and relationships and partnerships between all stakeholders, promote learning that is relevant, real world and utilizes problem-based learning approaches and which weaves in the 21st Century Learning Themes, one of which is environmental literacy. Programs in Kansas, such as Outdoor Wildlife Learning Sites, established in 1991 by the Kansas Department of Wildlife and Parks and the Kansas Green Schools Program, established in 2008 by the Kansas Association for Conservation and Environmental Education, in partnership with the Kansas Department of Health and Environment, support the development and use of classroom, schoolyard and community as rich learning environments ideally suited to supporting environmental literacy in our Kansas K-12 students.

Key Objective 1:

Evaluate the first two years of the Kansas Green Schools Program (KGSP) to identify challenges and opportunities to expand the program to all schools in Kansas by 2012.

Key Strategies:

1. Conduct an assessment of the existing KGSP to identify strengths and gaps.
2. Convene Green School managers and partners to prioritize areas for expansion of the program and identify additional resources to support the expansion.
3. Strengthen the infrastructure of the KGSP to increase the staff and financial resources necessary to expand the program to additional schools and better serve schools already in the KGS Network.

4. Convene a focus group of existing Green Schools to assist in developing a school recruitment plan to expand the number of schools in the network.

Key Objective 2:

Develop “best practices” guide for sustainable school implementation, to illustrate what types of models have been successful by 2013.

Key Strategies:

1. Identify case studies of successful KGS projects and classroom connections in urban, suburban, and rural schools that include outdoor classrooms, curriculum integration, school grounds and facilities (including school gardens), and school staff, parent, and community involvement.

Schoolyard as a Learning Lab: USD 389 Eureka, KS:

Students in Eureka planted a “living fence” with native grasses that not only provides a nice visual barrier between the school and the adjacent salvage yard, but also provides an opportunity for students to study native grasses up close.



2. Create a variety of formats that illustrate how schools implemented their green projects and classroom connections, such as videos, fact sheets, and presentations.
3. Make these available on the GS website (www.kansasgreenschools.org).
4. Ensure that professional development opportunities listed in ELP 2 Goal #2 include elements for Green Schools.
5. Explore ways to increase involvement by school maintenance, facility, and food service staff in GS projects.
6. Define and promote opportunities for community organizations, businesses, and others to become involved in GS projects, such as the GS Partners Program.

Key Objective 3:

Coordinate and expand opportunities for students to experience an outdoor learning environment at school (ongoing).

Key Strategies:

1. Convene a group of educators and program managers to conduct an assessment of existing programs supporting school outdoor learning environments of all types, including OWLS, NWF Schoolyard Habitat, and school fruit and vegetable gardens.
2. Identify gaps, areas of overlap, and additional resources required to meet schools' needs.
3. Develop the necessary resources and strengthen the infrastructure to coordinate and expand school outdoor learning environments.
4. Develop a user-friendly access point for educators to be aware of and participate in the various programs.
5. Identify model outdoor field experiences that can be integrated into the regular school curriculum.
6. Coordinate with area environmental and natural resource professionals to conduct outdoor field experiences and service learning projects at schools.
7. Include environmental and natural resource professionals in career and technical education programs.

Key Objective 4:

Coordinate and expand opportunities and access for children and families to enjoy outdoor experiences throughout the community. (Strategies 3-7 come from the Kansans for Children and Nature Comprehensive Plan with measurement/monitoring with Plan)

Key Strategies:

1. Develop a Kansas-specific model for groups of community-level public health and recreation professionals to conduct inventory of existing venues for outdoor experiences.
2. Conduct a survey among families to identify barriers to participation in outdoor experiences.
3. Utilize the Master Gardener and Master Naturalist programs to increase the conversion of schoolyards to natural habitats and school gardens for play and outdoor classrooms.
4. Create green corridors or "greenways" to connect communities, parks and schools via systems that encourage walking, biking and increased time outdoors by youth and families.

5. Increase access to naturalists in State Parks and other public lands to provide interpretive activities for children and families to enhance their discovery and enjoyment of Kansas' natural resources.
6. Develop "greening initiatives" that create nature play areas within communities to provide outdoor experiences for children close to home.
7. Expand the outdoor mentors program, which is designed to identify individuals who will help encourage more kids to get involved with nature.

Long Range Vision for Goal 3:

Kansas students engage in rich learning environments where relevant and meaningful learning deepens understanding and appreciation of the natural and human-made environment and the complex interrelationships between humans and the places we live. The school, school grounds and community are integral in learning activities and Kansas students are actively involved in helping to make these spaces more sustainable.

Schoolyard as a Learning Habitat: Starside Elementary School Desoto, KS

Students at Starside Elementary School raised money to put in a new pond in their outdoor classroom. Here, teacher Elyzabeth Navarre (dressed as Mother Nature) uses the pond to teach students about the water cycle. Pictured with Ms. Navarre and the children are the school mascots, Bob and Betty Ball, created from re-used foil that the students collected to be recycled.



Goal 4: Monitoring and Assessing Environmental Literacy

Learning experiences that promote an increased connections to the land and a fuller understanding of the environment will be regularly monitored and assessed to determine the range of experiences in PreK-12 learning settings, the quality of those experiences and the impact of those experiences on students' environmental literacy.

Objective 1:

Work with the KSDE and KSBE to develop and collect assessment data of environmental education learning experiences in PreK-12 settings on an annual basis.

Key Strategies:

1. Identify currently existing indicators of outdoor/environmental learning within Kansas assessments administered to K-12 students. In addition, explore current data collected as a part of the 21st Century Learning Initiative in Kansas.
2. Identify gaps in assessment data related to outdoor/environmental learning in PreK-12 with KSDE staff.
3. Work with KSDE staff to design a mechanism for collecting necessary data.
4. Collect and analyze data on an annual basis to be compiled into an annual report of progress and achievement.
5. Using assessment data, monitor progress toward goals outlined in Environmental Literacy Plan for Kansas and modify or adapt the plan as appropriate every three to five years.

"Being environmentally literate is knowing how you are effecting your environment and what you can do."

Tyler Selves, Goddard High School Student



Objective 2:

Utilize the Kansas Green Schools Network to collect data on successful school-based models that incorporate best practices in utilizing outdoor learning, green school-based projects and high quality environmental education on an annual basis.

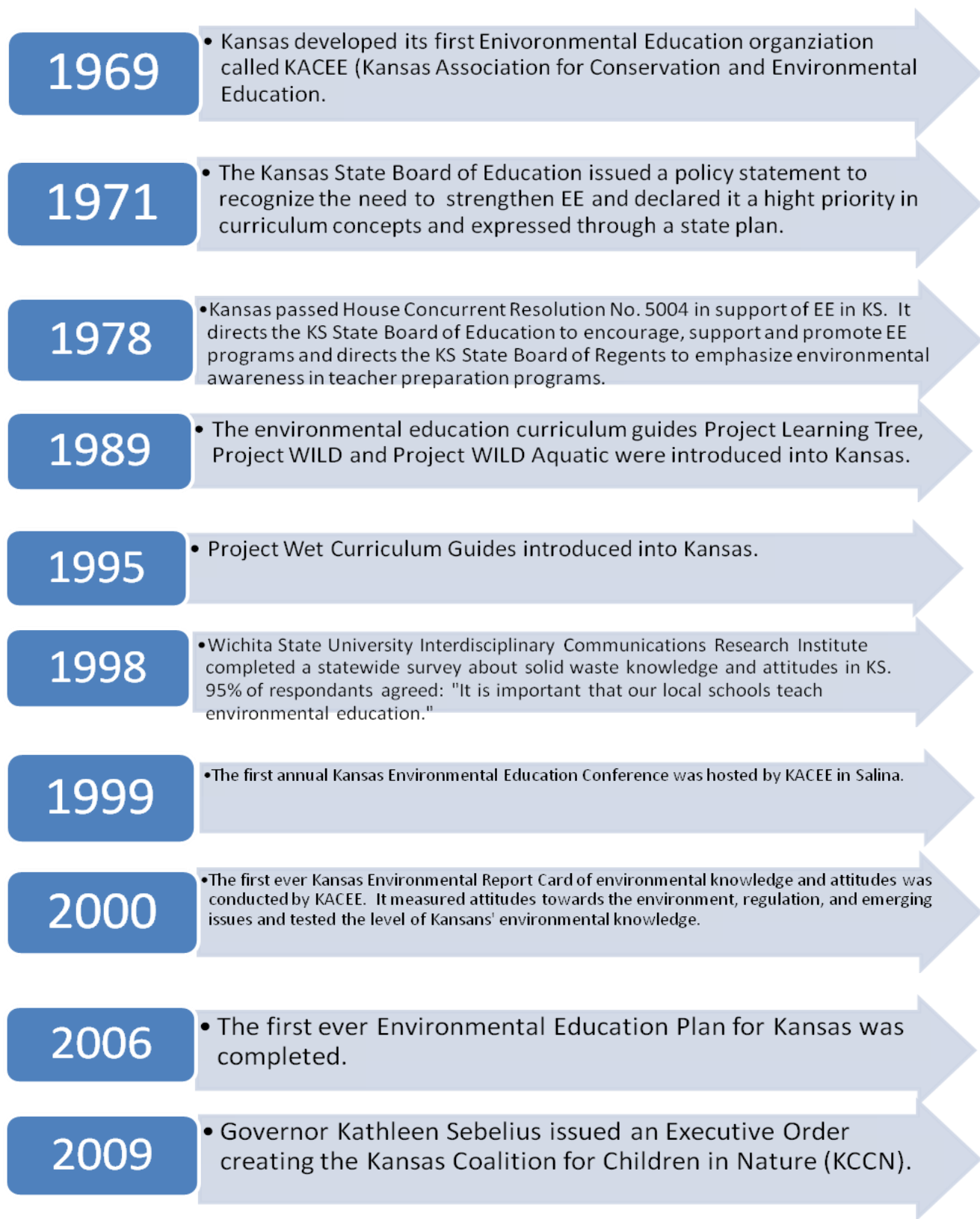
Key Strategies:

1. Develop an online data collection tool designed to collect data from Kansas Green Schools related to program and project activities, impacts on students and environmental quality improvements on an annual basis.
2. Utilize data to provide recognition to exemplary Kansas Green Schools .
3. Incorporate data into “best practices” guides, web profiles, KGS Annual Report and overall assessments of progress toward goals outlined in the Environmental Literacy Plan for Kansas.

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Overview: History of Environmental Education in Kansas



Work Plan: Environmental Literacy Plan for Kansas

	2011	2012	2013	2014	2015
Goal 1: 1 EE Standards benchmarks evidenced in assessed indicators					
Goal 1:2 Develop instructional examples supporting environmental literacy					
Goal 1:3 Instructional resources for environmental literacy provided for KSDE website					
Goal 1:4 Work to include one unit of EE as qualified admissions approved by the KS Board of Regents					
Goal 1:5 Develop environmental literacy, teaching “maps”, documentation models and recognition to support KS 21 st Century Learning Skills					
Goal 1:6 Establish environmental education as a listed alternative for the three credits of science required for high school graduation					
Goal 2a:1 Develop a “best practices” guidelines document for environmental education teacher professional development					
Goal 2a:2 Implement Guidelines for Preparation of Environmental Educators from NAAEE with formal educators					
Goal 2a:3 Develop guidelines for presentation to Board of Education for adoption consideration to integrate EE content into a multi-disciplinary curriculum					
Goal 2a:4 Increase access, incentive and opportunities for formal educators to participate in EE professional development					
Goal 2b:1 Increase by 50% the number of EE professional development programs and materials that are aligned with the NAAEE Guidelines for Excellence					
Goal 2b:2 Assist non-formal educators to interpret state education standards and new initiatives to support formal educators to integrate EE into curriculum					
Goal 2b:3 Develop certification program for EE PD instructors to provide EE PD for formal educators in accordance with KSDE professional development standards					
Goal 2b:4 At least 35% of certified PreK-12 educators participate in EE related professional development					
Goal 2c:1 Increase awareness/understanding of NAAEE Guidelines for Excellence and benefits to education programs among non-formal educators					
Goal 2c:2 Develop self-evaluation of EE programs and materials for non-formal education programs and materials, aligned with the NAAEE Guidelines					
Goal 2c:3 Expand and update infrastructure for ongoing professional development and networking for non-formal environmental educators					

	2011	2012	2013	2014	2015
Goal 3:1 Evaluate the first two years of the Kansas Green Schools Program (KGSP) to identify challenges and opportunities to expand the program to all schools in Kansas					
Goal 3:2 Develop “best practices” guide for sustainable school implementation, to illustrate what types of models have been successful					
Goal 3:3 Coordinate and expand opportunities for students to experience an outdoor learning environment at school					
Goal 3:4 Coordinate and expand opportunities and access for children and families to enjoy outdoor experiences throughout the community					
Goal 4:1 Work with the KSDE and KSBE to develop and collect assessment data of environmental education learning experiences in PreK-12 settings annually					
Goal 4:2 Utilize the Kansas Green Schools Network to collect data on successful school-based models					

Executive Summary

"I promise you that we will be a committed partner in the national effort to build a more environmentally literate and responsible society...Right now, in the second decade of the 21st century, preparing our students to be good environmental citizens is some of the most important work any of us can do. It is for our children, and our children's children, and generations yet to come."

(US Secretary of Education, Arne Duncan, September 2010)

In 2009, Governor Kathleen Sebelius issued an Executive Order creating *Kansans for Children in Nature* (<http://kcn.ksoutdoors.org>) with the charge of creating a comprehensive plan to increase the time Kansas children spend learning and playing outdoors. The Environmental Literacy Plan for Kansas is major component of this comprehensive plan and created with diverse and broad-based input from Kansas educators, state natural resource agencies, businesses and non-profit organizations. The development of this plan comes in response to an increasing body of research suggesting that our children spending less and less time outdoors and suffering the consequences. According to a 2010 Kaiser Family Foundation report, our children are spending up to 7.5 hours in front of electronics on a daily basis. As a result, children, by some estimates, are spending less than a half hour per week in unstructured time outdoors (Hofferth & Sadberg, 2001). This lack of time spent outdoors has been dubbed "nature deficit disorder" (Louv, 2005). Research is suggesting that this decreased time in nature is having alarming impacts on our children including rises in childhood obesity, diabetes, cardiovascular disease, increased childhood asthma, sleep apnea, vitamin D deficiency, attention deficit/hyper active disorder and depression (McCurdy, et. al, 2010).

Coupled with decreased time spent outdoors and in nature, we have decades of evidence that the average American is environmentally illiterate. When given a 10 question environmental knowledge quiz, Americans, on average, answered only 3 out of the 10 questions correctly (NEEF, 2005). The Environmental Literacy Plan for Kansas (ELPK) provides a comprehensive plan for promoting environmental literacy for K-12 students in Kansas while providing increased opportunities for children to learn in and about nature. With an increased understanding and appreciation for nature and the environment, the ELPK will help to encourage children to spend more time outdoors on a regular basis exploring the wonders of nature.

The following outlines the goals and key objectives addressed in the ELPK:

Goal 1: Addressing the Education of K-12 Students for Environmental Literacy

Goal 1: Kansas high school graduates are prepared to be successful in post-secondary, career and life opportunities as environmentally literate citizens who:

- develop attitudes of appreciation and concern for the environment
- take individual and collective action toward addressing environmental challenges in their everyday choices

Structural Components that support environmental literacy education and achievement in K-12 classrooms:

- curriculum content standards
- curriculum content areas
- high school graduation requirements
- curriculum courses or subjects

Key Objective 1:

At least 90% of the Environmental Education Standards for Kansas benchmarks (<http://www.kacee.org/standards>) are evidenced in assessed indicators of core curriculum testing for K-12 students by 2015.

Key Objective 2:

Develop 2-3 instructional examples related to environmental education/literacy for each corresponding assessed indicator and provide to the KSDE for their website as supporting documents to the standards by 2012.

Key Objective 3:

Partner with KSDE to include EE instructional resources within the Instructional Resources page on the Careers, Standards and Assessment Services/Instructional Resources page on the KSDE website by 2014.

Key Objective 4:

Work with the Kansas Board of Regents to include one unit of environmental education as an approved qualified admissions statute in precollege curriculum (required for admission to state regents institutions), in accordance with HCR 5004. Environmental education will be included under the curriculum specifications for Natural Science as one of the three approved units and/or under curriculum specifications for Social Studies (up to one unit selected from i.e. Current Social Issues) required for admissions into a Regent's Institution by 2015.

Key Objective 5:

Enhance the connection to Route 21, the Kansas 21st Century Skills initiative that promotes using environmental literacy as an integrating theme for preparing Kansas students for the 21st Century through assessments of environmental literacy, teaching "maps", documentation models and recognition by 2015.

Key Objective 6:

Establish environmental education as a listed alternative for the three credits of science required for graduation (like anatomy or honors biology) for Kansas High School Graduation Requirements identified by QPA which currently include (3) three units of science, which shall include physical, biological, and earth and space science concepts and which shall include at least one unit as a laboratory

Goal 2: Educator Professional Development for Environmental Literacy

Goal 2a:

Formal Educator Professional Development: Formal educators (pre-kindergarten – grade 12, in-service and pre-service) in Kansas have in place a variety of professional development opportunities that (1) build environmental content knowledge; (2) develop pathways for integration into local curriculum; and (3) use best practices for quality environmental education. With these tools, educators will be better equipped to prepare students to be environmentally literate adults who can take individual and collective action towards addressing environmental challenges.

Key Objective 1:

Develop a “best practices” guidelines document for environmental education teacher professional development, including successful PD models, pedagogy, and practice by 2013.

Key Objective 2:

Increase content knowledge of EE among formal educators using the Guidelines for Preparation of Environmental Educators from NAAEE by 2012.

Key Objective 3:

Develop state guidelines for presentation to Kansas State Board of Education for adoption consideration which integrate EE content into a multi-disciplinary curriculum by 2014.

Key Objective 4:

Increase access, incentive and opportunities for formal educators to learn about and participate in professional development (ongoing).

Goal 2b:

Non-Formal Educator/Formal Educator Program Integration: Non-formal educators (persons teaching outside the framework of the formal education system) in Kansas have in place a professional development system that supports their efforts to (1) provide quality professional development for formal educators; and (2) build on and enrich environmental education in the formal education system. Through this system, non-formal educators will build capacity and ensure relevance of programming and services by partnering with formal educators to achieve an environmentally literate citizenry.

Key Objective 1:

Increase by 50% the number of EE professional development programs and materials that are aligned with the NAAEE Guidelines for Excellence in EE to be offered by non-formal educators for formal educators by 2013.

Key Objective 2:

Assist non-formal educators to interpret state education standards and new initiatives in order to assist formal educators to integrate EE into a multi-disciplinary curriculum (ongoing).

Key Objective 3:

Using Goal 2a Objective 1, develop a certification program for EE PD instructors to provide EE PD for formal educators in accordance with KSDE professional development standards by 2015.

Key Objective 4:

By increasing awareness of EE related opportunities/resources for professional development, at least 35% of certified PreK-12 educators participate in EE related professional development by 2015.

Goal 2c:

Non-Formal Educator Professional Development: Non-formal educators (persons teaching outside the framework of the formal education system) in Kansas have in place a variety of professional development opportunities that (1) assist them in providing quality environmental education; and (2) encourage the use of best practices for environmental education. As a result, non-formal educators will be better equipped to prepare audiences to be environmentally literate citizens who can take individual and collective action towards addressing environmental challenges.

Key Objective 1:

Increase awareness and understanding of NAAEE Guidelines for Excellence and their benefits to non-formal education programs among non-formal educators (ongoing).

Key Objective 2:

Develop opportunities for self-evaluation of EE programs and materials for non-formal education programs and materials in order to increase the number of EE professional development programs and materials that are aligned with the NAAEE Guidelines for Excellence by 2014.

Key Objective 3:

Expand and update infrastructure for ongoing professional development and networking to assist non-formal educators in staying current with new developments, initiatives, and best practices in the field of EE (ongoing).

Goal 3: Learning Environments that Support Environmental Literacy

All schools in Kansas have access to, support for and the necessary resources to create a coordinated network of sustainable schools which foster active, engaging, hands-on and relevant learning experiences in classrooms, schoolyards and communities for students. These learning environments provide the infrastructure for achieving environmental literacy goals. Teachers, schools and school

districts have access to diverse resources for creating high quality learning environments including technical assistance with curriculum connections and environmental stewardship projects, funding and professional networking that supports a community of learners.

Key Objective 1:

Evaluate the first two years of the Kansas Green Schools Program (KGSP) to identify challenges and opportunities to expand the program to all schools in Kansas by 2012.

Key Objective 2:

Develop “best practices” guide for sustainable school implementation, to illustrate what types of models have been successful by 2013.

Key Objective 3:

Coordinate and expand opportunities for students to experience an outdoor learning environment at school (ongoing).

Key Objective 4:

Coordinate and expand opportunities and access for children and families to enjoy outdoor experiences throughout the community. (Strategies 3-7 come from the Kansans for Children and Nature Comprehensive Plan with measurement/monitoring with Plan)

Goal 4: Monitoring and Assessing Environmental Literacy

Learning experiences that promote increased connections to the land and a fuller understanding of the environment will be regularly monitored and assessed to determine the range of experiences in PreK-12 learning settings, the quality of those experiences and the impact of those experiences on students’ environmental literacy.

Objective 1:

Work with the KSDE and KSBE to develop and collect assessment data of environmental education learning experiences in PreK-12 settings on an annual basis (ongoing).

Objective 2:

Utilize the Kansas Green Schools Network to collect data on successful school-based models that incorporate best practices in utilizing outdoor learning, green school-based projects and high quality environmental education on an annual basis (ongoing).

