



LOUISIANA

Environmental Literacy Plan



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PAGES FOR LETTERS FROM LDWF, LDOE, AND THE GOVERNOR

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I. EXECUTIVE SUMMARY

Louisiana’s rich and dynamic environment encompasses a vast area of land, water, and culture that must be sustained for future generations. Our natural resources are the lifeblood of the state and nurturing a healthy environment requires that we make wise decisions about using these resources. The vision of the Louisiana Environmental Literacy Plan (ELP) is to establish a population that understands, feels connected to, and is inspired to protect, preserve, and restore our environment for present use and future sustainability. This means that “environmentally literate” citizens will have the knowledge, tools, and sensitivity to thoughtfully explore environmental issues, select optimal actions to mediate problems, and routinely include the environment as a crucial element in their work, play, and daily life.

To foster an environmentally literate populace, citizens should:

- Have opportunities to experience and learn about our natural environment;
- Understand human impact on the environment;
- Develop a sense of stewardship towards the earth and its finite resources; and
- Choose actions that protect and nurture the natural environment.

The purpose of the ELP is to develop a comprehensive strategy which will provide children and adults throughout Louisiana with a multi-disciplinary approach to environmental education. The plan recommends actions that ensure *all citizens* have the opportunity to connect with nature in positive ways and thus become informed and responsible stewards of our environment. Research shows that more time spent outdoors often leads to increased environmental literacy, with individuals becoming more involved in stewardship and volunteer activities to protect, enhance, and conserve our natural resources and fragile ecosystems.





Based on a broad-based planning process among environmental educators led by the ELP Subcommittee¹, this document presents **five main elements** framing the development of an environmentally literate population in Louisiana:

1. **PUBLIC OUTREACH** to inform and engage all individuals and groups about environmental literacy and environmental education opportunities;
2. **ENVIRONMENTAL CAREER PATHWAYS** to develop the environmentally knowledgeable and skilled workforce necessary to improve Louisiana's environment and economy;
3. **PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR FORMAL AND INFORMAL EDUCATORS** to improve and perfect their environmental content knowledge and expertise to effectively teach others;
4. **UNIFIED PRE-K-20 EDUCATION APPROACHES** that incorporate environmental literacy within Louisiana's academic standards, graduation requirements, and assessment; and
5. **PLAN IMPLEMENTATION** to ensure that all Louisiana citizens have access to the resources and information they need to make informed decisions regarding our local environment.

¹ Listed in the Acknowledgements Section of the plan, the ELP Subcommittee is made up of members of the Louisiana Environmental Education Commission.

These elements are linked to **recommended actions and steps** which include the creation of:

- A comprehensive statewide database of environmental education resources and opportunities for public use;
- A statewide campaign to promote environmental literacy and explain why it is important;
- A blueprint for Pre-K-20 education to increase environmental awareness and outdoor experiences for students before Kindergarten through college, to enhance their ability to discern and practice responsible stewardship of natural resources, and to identify ways they can personally and collectively reduce their carbon footprints; and
- A framework for informal educators to aid in the distribution of environmental and outdoor programming information that addresses water and air quality, wetland loss, habitat restoration, forest and prairie ecology, climate change, or other meaningful environmental subjects.

Expected outcomes of this plan for Louisiana residents include:

- Environmental literacy embedded and integrated throughout educational and daily life;
- Increased outdoor experiences in nature, environmental knowledge, and stewardship activities;
- Awareness of a unified effort to establish environmental literacy guidelines;
- All regions of Louisiana understanding each other's environmental problems; and
- State-wide collaboration to address environmental issues.

There is no better time than now to present a guide for all Louisiana citizens to become more connected to our natural environment. All stakeholders will be empowered by improved access to information and experiences that lead to responsible practices benefitting our people and environment.



Paddlers prepare for a day of learning and exercise in Louisiana's bayous.

II. LOUISIANA ENVIRONMENTAL LITERACY PLANNING PROCESS

Over the past decade, federal education policy reauthorization and reform language like the *No Child Left Inside Act*² has resulted in the creation of environmental literacy plans among the states. In Louisiana, potential funds associated with national reforms would likely flow through the Louisiana Department of Education (LDOE) to support action items in Louisiana’s plan. Prompted by this opportunity, Louisiana Environmental Education Commission (LEEC)³ members formed the ELP Subcommittee to create the state’s plan.

The subcommittee held an ELP Summit in Baton Rouge in July 2010 to gather input and begin the plan development process. Seventy-seven stakeholders representing universities, local, state, and federal agencies, Pre-K-20 school and university systems, professional organizations, industries, and nonprofit organizations from around the state came together to share ideas on environmental literacy needs in Louisiana and to learn about the need for a state plan. Three key questions were explored during the Summit – *What do Louisiana citizens need to be environmentally literate? What actions are needed in our plan to improve environmental literacy? and How can your organization possibly contribute to environmental literacy in Louisiana?* Responses from the diverse stakeholders reflected a wide variety of needs and suggested actions which were used to outline a plan that targets ALL citizens. Summit participants acknowledged that plan development came at a critical time for Louisiana residents as they face complex environmental challenges associated with coastal land loss, energy resource use and extraction impacts, and water quality concerns in fresh and marine waters.

Presentations were made to the Louisiana House of Representatives’ Natural Resources and Environment Committee in 2010 and 2011 emphasizing the need for a plan and informing the members of the current status of plan development. ELP subcommittee members researched other state plans, identified Louisiana’s environmental education strengths and weaknesses, and prepared this document for stakeholder revisions and ultimately for consideration by the general public, the LDOE, and Governor Jindal.



² The No Child Left Inside Act was last proposed in 2011, but these ideas continue to be championed by NCLICoalition.

³ A list of member names and affiliations is located on the World Wide Web: <http://www.wlf.louisiana.gov/contacts>.

III. LOUISIANA ENVIRONMENTAL LITERACY PLAN ACTIONS

Environmental education stakeholder input and the ideas supporting the *No Child Left Inside* legislation guided the creation of five main plan elements: public outreach, environmental career pathways, professional development for educators, unified Pre-K-20 formal education approaches, and plan implementation. The current conditions and recommended actions are described further.

1. Public Outreach

Current Status and Existing Information

Reaching as many members of the public as possible and making them aware of the hundreds of opportunities to experience and learn about nature in Louisiana is paramount to improving statewide environmental literacy. Many governmental agencies, nonprofit organizations, and private companies provide research-based information and programs that aim to educate the public about environmental issues and solutions, but these resources are underutilized due to a lack of public exposure. There is currently no one-stop site that identifies and showcases all available opportunities that are specifically designed for the public.

The LEEC presently provides a webpage with environmental education program opportunities that span multiple disciplines, with topics organized to aid the general public, formal and informal educators, and students. Like many organizations, the LEEC provides website posts and sends weekly news to an email-based list of participants, notifying them of upcoming events, workshops, conferences, funding opportunities, and student competitions available throughout Louisiana and the Gulf Coast region. Other sources of localized environmental education news blasts, each with their own unique stakeholder group, include those coming from the Louisiana Environmental Education Association (LEEA), the Louisiana Wetland Education Coalition, the Coastal Wetlands Planning, Protection and Restoration Act, the Louisiana Science Teachers Association (LSTA), and the Gulf of Mexico Alliance.



In order for the general public to become aware of environmental information and opportunities, there is a need for a statewide environmental literacy hub that connects all citizens throughout the state. Connecting people to region-based environmental issues such as linking north Louisiana aquifer replenishment to central Louisiana black bear protection to south Louisiana coastal land loss to the dead zone in the Gulf would ultimately benefit and engage all Louisiana stakeholders.

Actions

- i. The LEEC will create an online one-stop resource matrix of environmental literacy opportunities for all. The complete inventory will categorize environmental education assets into home or classroom activities, field experiences, volunteer events or clubs, and professional development pursuits specific to multiple identified audiences by age and/or grade level. Types of programming include standards and/or curriculum-based guides or programs, field experiences, service learning activities, and professional development opportunities.
- ii. With support from groups offering environmental literacy opportunities, the LEEC will maintain an environmental education and outreach database and update it on a regular basis.
- iii. The LEEC will create and manage an Environmental Literacy listserv which will send information by email to those who register.
- iv. An educational marketing campaign is recommended to highlight the importance of environmental literacy, that there is a unified plan for our state, and to introduce the many enjoyable learning opportunities available to everyone throughout Louisiana, which will be listed in the online matrix. Possible specific actions follow.
 - Press releases will be sent to various media outlets across the state regarding the ELP, and interviews on radio and television programs will be scheduled..
 - A social media campaign focused on providing environmental information and offering forums for individuals to share environmental information will be undertaken and will include Facebook, Twitter, LinkedIn, You Tube, and others.
 - Active participation will be sought from the State Library of Louisiana system, the Louisiana Library Association, universities and state agencies, as well as economic, cultural, and community organizations to help disseminate information to their members.
 - Public service announcements will be created and distributed.
 - Print media including flyers or other items will be designed and disseminated.
 - Outreach at festivals and similar events will be provided.
 - A customized mobile barcode would be created linking the plan and list to a QR Code.
- v. Formal educators will coordinate with area environmental and natural resource professionals to conduct, collaborate on, or advertise outdoor service learning and field experiences at school and off campus.



Public learns about fly fishing at local festival.

2. Environmental Career Pathways

Current Status and Existing Information

State agencies support many jobs in environmental sustainability, resource management, and regulation, including the Louisiana departments of Environmental Quality, Natural Resources, Wildlife and Fisheries, Culture, Recreation and Tourism, and Health and Hospitals among others. Many federal agencies in Louisiana have similar workforce needs, for example, the United States Army Corps of Engineers, Geological Survey, National Park Service and Fish and Wildlife Service. The 2012 State Coastal Master Plan paves the way for \$50 billion worth of new coastal restoration projects over the next 50 years, which are slated to create many jobs for individuals versed in environmental science, biology, geology, engineering, and Geographic Information Systems (GIS). The private sector, including engineering, environmental planning, oil and gas, and biotechnology firms, is searching for staff with applied science education and experience, and there are indications that these skills will continue to be in demand into the foreseeable future.

To meet the immediate and future needs of Louisiana, the state must have an environmentally-oriented workforce with strong science, technology, engineering, and math skills. Environmental career pathway information will help youth link their interests and talents to the green jobs initiatives across the state. Currently, the Louisiana Workforce Commission has a Growing Green program that provides information about available green jobs, Louisiana's green economy, analysis of the sector, career videos, training providers, coastal restoration associations, and other news and information. Training providers, including four-year colleges, community colleges, technical colleges, and approved apprenticeships, offer a variety of environmental career pathways. Linking grade-level students to continued learning opportunities in predicted job markets is critical for both students and for Louisiana's dynamic economy.



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Holy Cross High School students assess the wetlands' health using a spectroradiometer, which measures reflectance of light from vegetation.

Actions

- i. The LDOE Office of Content will use the ELP as a source of information and support for environmental educators.
- ii. Connections will be made with local and regional universities, community colleges, and technical colleges to share resources, career days, service learning opportunities, and other events regarding environmental literacy tools and information.
- iii. The LEEC will build a relationship with the Louisiana Workforce Commission's Growing Green program to share the list of environmental education opportunities that they could use to support their training programs.
- iv. Educators and guidance counselors will assist students with career and academic planning, including involvement in environmental volunteer, intern, and service learning opportunities.

3. Professional Development for Formal and Informal Educators

Current Status and Existing Information

Professional development opportunities for formal and informal educators on environmental issues in Louisiana occur primarily through workshops and annual conferences, where participants are introduced to current issues and important content concepts and engage in learning activities that



Barataria-Terrebonne National Estuary Program (BTNEP)'s Kerry St. Pe leads an educator training on land loss.

represent exemplary teaching strategies. The Environmental Education Symposium, a joint effort of the LEEA and the LEEC, is the only conference in the state that solely targets environmental education. Environmental workshops are also offered at annual conferences of the LSTA, Louisiana Earth Science Teachers Association, and the Southern Association of Marine Educators. (There are also many opportunities for educators to enroll in workshops that focus on state standards.) These workshops are typically held by state, university, or nonprofit organizations that have developed and currently implement specific programs.

In December 2009, the federal Environmental Education and Training Partnership (EETAP) published a study of environmental education professional development needs and priorities. The study, aimed at both formal and informal educators, addresses priorities through 2015, gaps in existing offerings, and how to improve environmental literacy. This study lends additional



recommendations relevant to the ELP, which are reflected in the following actions.

Actions

- i. The LEEC and other partners will provide a comprehensive list of in-state professional development and continuing education opportunities that are found in the matrix of environmental literacy opportunities for all.
- ii. The LEEC will promote more Research Experience Programs for Teachers. These programs provide rich, hands-on learning experiences for teachers that are easily transported to the classroom. These endeavors open new avenues for learning and thinking like a scientist or mathematician and are financially supported by the National Science Foundation.
- iii. Environmental and science education leaders will consider the findings of the EETAP's study and provide the resources to address deficiencies in Louisiana.
- iv. Periodic surveys will be conducted to determine professional development needs for formal and informal educators in Louisiana.
- v. Regional professional development opportunities will be developed by environmental and/or education groups to address targeted needs.
- vi. To ensure that everyone has access to important environmental information, presentations will be adapted to serve each audience, regardless of education level or age.
- vii. Professional development workshops will be provided on the strategies and management skills needed for planning and implementing outdoor experiences and service learning projects.
- viii. Partners from other professions like planning, architecture, engineering, and landscaping, will be identified and encouraged to offer environmental sustainability professional development workshops to engage educators and the public.
- ix. A partnership will be formed among environmental educators/organizations to offer

an online forum to facilitate learning that encourages asking questions, exchanging information, and sharing research findings. Efforts will be made to better understand how people interact and connect with nature, what leads people to take action, how to engage diverse audiences, and integrate environmental education within education communities and the general public.

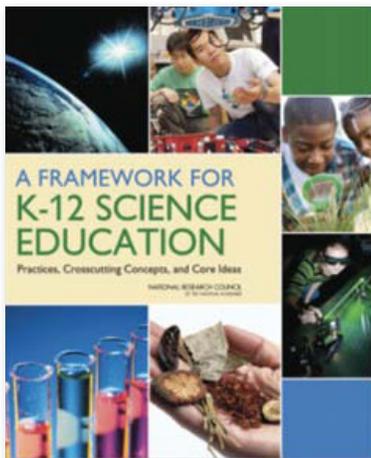
- x. The LEEC will identify and recruit a diverse group of partners to accomplish these actions.

4. Unified Pre-K-20 Education Approaches

a) Standards and Content

Current Status and Existing Information

Current and future science education standards contain many environmental concepts. These concepts are woven throughout grades one through eight and are integrated into essential science courses at the high school level.



In July 2011, the National Research Council released *A Framework for K-12 Science Education Practice, Crosscutting Concepts, and Core Ideas*. This framework served as a guide for the development of the *Next Generation of Science Standards (NGSS)*, which were released in April, 2013. Environmental concepts and issues are integrated throughout all content domains in the framework and are incorporated into the new national science standards.

In August 2011, the Louisiana Board of Regents completed the *Master Plan for Public Postsecondary Education in Louisiana: 2011*. Their first goal is to “increase educational attainment” of the adult population, which involves developing a skilled workforce to support an expanding economy. Hence, postsecondary educational entities may also benefit from incorporating environmental science concepts throughout their curriculum for both academic and economic purposes.

Actions

- i. Upon the release of the NGSS, the LDOE will review the new standards for acceptance.
- ii. Instructional materials and outdoor activities produced by informal educators will be aligned to the new science standards that are adopted by the LDOE.
- iii. The LDOE and LSTA will be available to collaborate with the environmental education community in producing high quality, standards-aligned resources and materials for use in formal education, informal education, and outdoor activities and events in Louisiana.
- iv. Assistance to informal educators in aligning their activities to new content standards will be

For additional information on Louisiana’s Science Content Standards, visit: <http://www.louisianabelieves.com/resources/library/academic-standards> and select the grade or course you wish to examine.

provided.

- v. Professional development will be provided to ensure proper implementation of environmental activities that are aligned with state standards.

b) Graduation Requirements for Environmental Literacy

Current Status and Existing Information

Louisiana's Core 4 Curriculum includes four science courses required for graduation from high school. Biology I is required, but students choose from science courses available in their school including Physical, Earth and Environmental sciences, Chemistry, and Physics. As in Biology I, most science courses have strong cross connections to environmental concepts.

Actions

- i. The LDOE will continually review and update graduation requirements. There are environmental concepts included throughout the new science standards.
- ii. Educators will encourage schools with community service requirements to include environmental service learning hours that are tied to curriculum.

c) Assessment of Environmental Literacy

Current Status and Existing Information

Louisiana has a statewide assessment program in place for public school students in grades three through eight. The Biology End of Course (EOC) exam is administered at the conclusion of the Biology I course, which is usually in grade ten.

Actions

- i. The LDOE will continue to assess environmental concepts as part of the grades three through eight statewide assessments and as part of the Biology I EOC assessment at the high school level.





- ii. The LEEC will develop a list of evaluation tools to assess environmental literacy for informal educators to apply to their programs if appropriate. This will assist informal educators in demonstrating the value of their programs to formal educators, the general public, and to potential funders.

5. Plan Implementation

Current Status and Existing Information

Some actions in the plan will only become achievable with sustained funding. There are a number of national and state agencies and private foundations that offer grants for environmental education, grant writing, and fundraising.

Actions

- i. The LEEC will provide links on their website to federal, state, and other organizations that provide funding opportunities specifically related to improving environmental literacy.
- ii. The LEEC will provide sources for grant writing assistance on its website.
- iii. The LEEC and LEEA will disseminate timely information on funding opportunities through digital newsletters.

IV. WHY LOUISIANA NEEDS AN ENVIRONMENTAL LITERACY PLAN

Ecosystem Health

Louisiana's unique lands, waters, and culture are treasured by its citizens and visitors. Protecting and preserving its charm and natural resources for current and future generations is the driving force of the ELP. Louisiana's abundant natural resources are located along 20,000 square miles of coastline, underground in reservoirs, in the shallows of bayous and backwaters, and within topsoil supporting all manner of agriculture and forestry. Louisiana's riches of oil and gas reserves found deep within gulf waters and beneath hardened clay supply much of the energy needs of the United States. The nation also depends on Louisiana for its timber, agricultural products, commercial fisheries, significant port system, and outdoor recreation opportunities.

Louisiana's diverse ecosystems include barrier islands and coastal lowlands, rolling and hilly coastal plains with evergreen and deciduous forests, large river floodplains, and a variety of aquatic habitats.⁴ Each eco-region offers unique contributions that provide the resources necessary to sustain our environment and livelihoods.

4 Chapman 2011



Louisiana's Ecosystems Support Our Economy

- Forestry is the top agricultural industry in Louisiana, resulting in a \$3.1 billion impact including 12,694 jobs.¹
- Rice is Louisiana's 2nd largest crop grown, dependent upon almost 400,000 acres of fertile ground, and was worth \$144 million in 2007.²
- Louisiana sugarcane produces 180 to 240 pounds of sugar from each ton of cane, much more than the tropical growing regions.³
- Essential to Louisiana's economy, one out of 70 jobs in Louisiana is related to commercial fishing.⁴
- Recreational fishing produces 20,000 jobs and about \$1.7 billion each year in Louisiana.⁵
- Louisiana's Gulf Coast supports a \$4.2 billion oil and gas industry that employs people in every parish.⁶
- Louisiana Offshore Oil Port (LOOP) is the only offshore oil port in the nation, receiving, storing, and distributing oil imports and domestic oil from the Gulf of Mexico.⁷
- In a 2011 NOAA report, the United States Army Corps of Engineers stated that the port of South Louisiana has been ranked first in the United States for total tonnage for more than a dozen years and the largest tonnage port in the Western Hemisphere.⁸



1 Louisiana Forestry Association 2010

2 United States Rice Federation 2012

3 LSU AgCenter 2012

4 The Nature Conservancy 2009

5 LDWF 2006

6 Louisiana Oil & Gas Association 2006

7 LOOP 2012

8 NOAA 2011

Louisiana Ecosystems

Protect Human and Natural Habitats

- Louisiana has over three million acres of swamps and marshes and these wetlands filter contaminants from overlying waters, anchor sediments in place, and slow and absorb flood waters.
- Wetlands provide refuge for juvenile fish, shrimp, and crabs, protect economically critical infrastructure, and maintain elevation against sea level rise if critical marsh processes are not disrupted.
- Louisiana is home to 30 species listed as endangered or threatened including the Louisiana black bear, bald eagle, redheaded woodpecker, Kemp's Ridley sea turtle, and the endangered whooping crane.¹
- More than five million migratory birds depend on Louisiana's wetlands for stopover habitat.²
- A one-mile strip of coastal wetlands can reduce the average annual increase in property damage due to hurricanes by almost six million dollars or by \$6,000 to \$8,000 per acre.³
- Long-leaf pine forests and savannahs serve as homes to endangered species like the red-cockaded woodpecker and gopher tortoise, and have the highest diversity of rare plants in the state.⁴

1 USFWS 2012

2 CPRA 2012

3 Caffey, et. al. 2012

4 LSU AgCenter 2006



Louisiana Ecosystems Face Problems

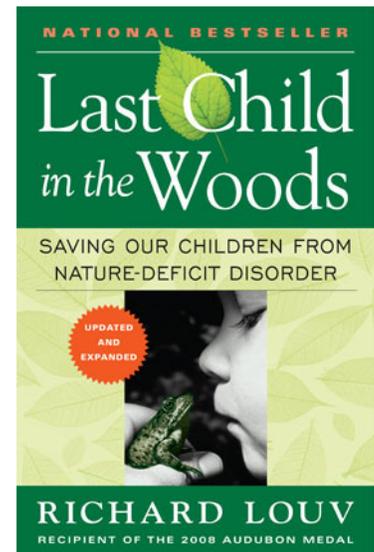
- While the Mississippi and Atchafalaya Rivers provide substantial economic benefits for the state, they also drain 41% of the continental United States, bringing with them pollution from urban and farm land runoff.
- Evidence of overuse of fertilizers, fungicides, and pesticides is found in the Gulf of Mexico's hypoxic or "dead zone" where nutrient-rich drainage waters of the Mississippi and Atchafalaya Rivers flow. Too much decomposing organic matter in the water creates low oxygen levels that cannot support aquatic animals.
- Coastal wetlands in Louisiana make up the seventh largest delta on earth, containing about 37% of the estuarine herbaceous marshes in the conterminous United States, yet this coastline experiences 90% of the coastal wetland loss in the lower 48 states.¹

¹ Lellis-Dibble et. al. 2008

Children's Health

Louisiana's children are our state's greatest resource. To ensure that our children grow up happy, healthy, and job ready, they need a well-rounded, challenging education that introduces them to a wealth of ideas and information. Providing opportunities for children to spend time learning and playing outdoors in natural settings can engage and connect them to nature in countless ways. Richard Louv, author of *Last Child in the Woods-Saving Our Children from Nature-Deficit Disorder* (2005), and recipient of the 2008 Audubon Medal, is one of the originators of the Children and Nature Movement to reconnect children with the outdoors. He has documented medical research that shows the impacts of children remaining disconnected from nature. Louv reports that during a typical week in 2008, only six percent of children aged nine to thirteen played outside on their own.⁵ According to Louv, students who attend schools that use outdoor classrooms and other forms of experiential education perform better in social studies, math, science, and language arts. Research by several others has similarly shown that engaging students in discovery and environmental-based education promotes higher-order thinking skills and is correlated with higher test scores in math and reading.⁶ The California Department of Education found that students in outdoor science programs improve their science test scores by 27%.⁷

Louv reports that children in outdoor education settings show increased self-esteem, problem solving skills, and motivation to learn. Research also suggests that there is a positive correlation between the amount of time children spend outdoors and increased attention spans. Studies by University of Illinois researchers demonstrate that spending time outside can reduce the symptoms of Attention



⁵ Charles, Louv, et. al. 2008

⁶ Lieberman and Hoody, 1998, Coyle, K. 2010

⁷ American Institutes for Research 2005

Deficit Hyperactivity Disorder and helps reduce the effects of stress and trauma experienced by children.⁸

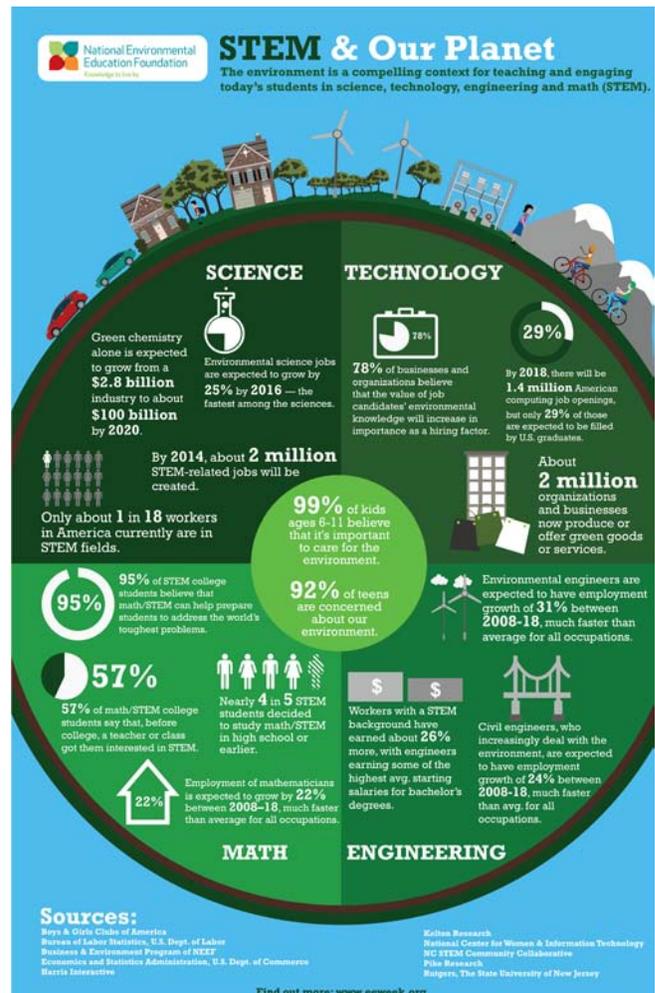
According to Louisiana’s healthcare professionals, there have been sizable increases in the number of overweight children over the course of the last twenty years. “I’m seeing more and more obese children,” stated Nancy Darrow, RD, LDN and CDC at Dauterive Hospital in New Iberia.⁹ “It’s a huge problem in Louisiana and also across the United States” noted Dr. Stewart T. Gordon, chief of pediatrics at LSU Health Sciences Center. Dr. Gordon believes this epidemic could be tied to a more sedentary lifestyle and that children need to spend more time exercising. In 2011, Pennington Biomedical researchers found that 48% of Louisiana’s children are overweight, the second worst in the United States.¹⁰ Department of Health and Hospitals’ Bruce Greenstein responded to Pennington’s report saying that there are “simple decisions we can make every day. Outside is available to all, wealthy or low income.” Movement happens outdoors, especially when children engage in activities that incorporate the natural environment.



Green Jobs

Interest in environmental impacts, quality of life issues, and alternative fuel developments has spurred job creation over the past decade. For instance, based on a research study for the Environmental Defense Fund in 2010 by Frost & Sullivan, companies continue to hire more employees due to increased demand and federal funding support of green energy infrastructure improvements. Nationally, jobs in environmental science are expected to increase 25% by 2016, and green chemistry jobs alone are projected to increase from a \$2.8 billion industry to a \$100 billion industry by 2020.¹¹

According to the Louisiana Workforce Division, green job growth is projected to increase by



8 Kuo and Faber Taylor 2004
9 www.louisianamedicalnews.com 2008
10 LA NBC 33, 2011
11 Boys & Girls Clubs of America and Bureau of Labor Statistics 2012.

14% over the next ten years. In fact, green job employment is growing faster than overall employment, mostly due to increased demands for limited energy resources, consumer preferences, and federal environmental policy changes. These shifts offer strong implications for changes in workforce development needs and a population that comprehends environmental issues and solutions.

Decision-making Today

While youth are our future, adults are currently the overall decision-makers, leaders, parents, consumers, and industrialists. It is in the state's best interest

to educate adults both directly and through their children. Studies from the National Environmental Education and Training Foundation have found that Americans have low levels of knowledge on basic environmental facts, underlying science concepts, causes of certain conditions, and important public environmental issues. Environmental "illiteracy" spans different age groups, as there is no appreciable difference in knowledge levels between people who completed high school before 1970 and those who graduated after 1990, when environmental education became more common.¹²



Hesco baskets are a Louisiana company's innovation used in coastal restoration projects.



To be competitive, the state works comprehensively among agencies and builds on the knowledge and established programs already in existence. The state has spent tax dollars to develop plans, initiatives, and guidelines that preserve and sustain our environment for economic, recreational, and cultural use. Each effort depends upon a population that can comprehend the natural and human-caused processes forming the lands, supporting the waters, and leading to their degradation. Efforts include *The 2012 Coastal Master Plan*, *Louisiana Speaks Regional Plan*, *Louisiana Wildlife Plan*, *Recommended Forestry Best Management Practices for Louisiana*, *Louisiana Department of Environmental Quality's Best Management Practices* (for point source and non-point source pollution), and parish, regional, city, and town comprehensive resiliency plans, among others.

V. ENVIRONMENTAL LITERACY BACKGROUND

There has been growing widespread interest in environmental comprehension, appreciation, and stewardship in the United States since the late 1960s and early 1970s. It was then that the federal government exhibited its commitment to sustainability by creating the EPA and passing the National Environmental Policy Act and the Clean Water and Air Acts. In the past, changing our habits regarding resource use depended primarily upon regulations. Despite initial objections, most of these regulations resulted in more jobs, better public relations for companies, and improved water and air quality for workers and citizens. Delicately balancing economics with environmental protection has produced more knowledgeable consumers, as evidenced by growth in demand for environmentally-friendly products.

The environmental literacy movement addresses the need for environmental education as a means of providing a clearer path to integrating learning with multiple disciplines and addressing overlapping issues of education, green jobs, health, and environmental quality. At the forefront of this movement and offering a clear pathway for improving environmental education is the *No Child Left Inside Act*, written by United States Representative of Maryland's 3rd District, John Sarbanes (latest version is H.R. 2547, December 2011).

In October 2011, the United States Department of Education launched the Green Ribbon Schools program, encouraging environmental literacy by having education leaders model solutions to



At home in Louisiana's Caddo Parish, Oil City Elementary Magnet leaders have transformed their school by incorporating the surrounding natural environment into its daily curriculum. "A decayed tree trunk, once scheduled for removal, was left in place and now serves as a decomposition station. With the help of parents and area residents, a greenhouse was constructed for the study of plant life cycles. A nature trail, lined with trees and shrubs indigenous to the area, encircles the school's former football field. Annual field trips to Caddo Lake allow fourth-grade students to capture, measure, weigh and release various fish, while sixth-grade students hike nature trails and note observations for writing assignments that describe seasonal changes." Since making these changes there have been marked improvements in student attendance, teacher recruitment, and standardized test scores, which are above average for the state.



improve poor environmental conditions at schools, and to help students better comprehend complex environmental issues such as building a sustainable future. Using support and advice from the EPA, LDOE, and others, Louisiana schools identify ways to become healthier, energy efficient, and to reduce a host of environmental impacts. There are four themes to become a Green Ribbon School: Eco-Campus, Health & Fitness, Nature Adventure, or Natural Classrooms. Each state annually nominates schools for the award. Several new schools and other institutional structures being built in Louisiana are designed with energy efficiency in mind, not just to address environmental concerns, but to reduce their costs. Recent examples are L. B. Landry High School in Orleans Parish and the Tourist Information Center in St. Landry Parish.

VI. CONCLUSION

It is expected that this plan will result in the following outcomes:

- Environmental literacy becomes embedded and integrated throughout educational and daily life activities for Louisiana residents;
- Children and adults increase outdoor experiences in nature, environmental knowledge, and stewardship activities;
- Stakeholders are aware of widely accepted environmental literacy guidelines that not only provide opportunities to learn, but also follow national and state education standards; and
- All regions of Louisiana understand each other's environmental problems and share ideas regarding solutions.



As more legislation becomes focused on integrating environmental and sustainable thinking throughout our education and economic institutions, the state of Louisiana will have a prepared population of environmentally literate citizens. **This plan provides a set of central guidelines for those who implement environmental literacy programs and activities and for those who want or need to receive them.** Environmental literacy is truly for everyone in that we all gain from learning about the problems facing our state and working toward solutions.



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