



Fall 2011
Volume 15
Issue 3

MISSOURI ENVIRONMENTAL EDUCATION ASSOCIATION

Fall 2011 Contents

President's View p. 1
A Partnership and a Plan

Upcoming Conferences p. 2
Assoc of Missouri Interpreters Conference, Missouri Trail Summit, STOM/MEEA Joint Conference, Greening Midwest Communities, Greening the Heartland, NAAEE Conference, Interface

New EE Curricula p. 2
Earth Science Animations, On-line Journal, Monarch, Whooping Crane and Hummingbird Migrations, Seeds, Environmental Literacy, Don't Be Fooled by a Photograph, Hometown Spatial Patterns, Satellite Images, Environment, Conflict and Disease in Asia

EE Jobs in the Midwest p. 3
Assoc Dir Philanthropy, Nature Conservancy

Membership Report p. 4

Missouri's Draft E Lit Plan p. 5

Joint STOM/MEEA Conference p. 6

PD Corner: Guidelines for Learning p. 7

Topics for Teaching: What Warming Means for Missouri p. 8

PD Workshops p. 9
Over a dozen workshops in the next weeks

Upcoming Grants and Awards p. 10
Lexus Eco Challenge, Greenworks, PolarTREC, Project Green Challenge, Toshiba K-5 Grants, and 8 more

Selected Events p. 11

Environmental and EE News Roundup p. 12

The MEEA Newsletter is published quarterly by the Missouri Environmental Education Association. Comments or Questions may be directed to Jan Weaver, 208 Tucker Hall, MU.

**President's View by Mike Kromrey:
A Partnership and a Plan**

This year, Science Teachers of Missouri (STOM) and MEEA decided to form a partnership and combine our organizations' annual conference. The conference will be held at Lange Middle School in Columbia, Missouri on October 7th and 8th. This year's conference promises to be excellent, with a stellar list of presenters, a pre-conference visit to the observatory, a silent auction, and much more! For details, check out the STOM website and page 6 of this newsletter (<http://www.STOM.org>)

In other news, MEEA is forging ahead with the Environmental Literacy Plan (ELP). The ELP has four overarching goals: 1) Missouri students will be environmentally literate, 2) Formal and Non-Formal Educators will understand and use best practices in Environmental Education, 3) Educational settings and resources will foster environmental literacy and 4) Environmental Education in Missouri Will be Sustainable.

Each of these lofty but important goals are addressed with a series of proposed strategies to implement and move us toward these goals. At the last MEEA board meeting, the members voted unanimously to accept and support this wonderful plan. Thank you to Jeanna Rhodes and Jan Weaver for taking the lead in developing this plan, and to the committee that drafted this plan for the two years of work it took to develop it. Check out a summary of the plan on page 5 of this newsletter

Sincerely,

Mike Kromrey
2011 MEEA President



NAAEE 40TH ANNUAL CONFERENCE
Raleigh-Durham, North Carolina • October 12-15, 2011

NAAEE Conference
October 12-15,
Raleigh Durham, NC

<http://www.naaee.net/conference>

Statewide Conferences and Workshops

- September 12-15 - Association of Missouri Interpreters Conference - Farmington - http://www.mointerp.net/?page_id=8
- October 6 and 7 - Missouri Trail Summit – Powder Valley Conservation Area, St. Louis
<http://mopark.org/displayconvention.cfm?conventionnr=10465>
- October 7 and 8 - Science Teachers of Missouri/Missouri Environmental Education Association Joint Conference - Lange Middle School, Columbia - <http://www.stom.org/events.php?action=eventDetails&eventUID=71>
- October 18 and 19 - Greening Midwest Communities Conference - Capitol Plaza Hotel, Jefferson City - <http://muconf.missouri.edu/gmcc3/index.html>
- February 23 to 25 (A) and 26 to 28 (B) – Interface 2011 A & B - <http://dese.mo.gov/divimprove/curriculum/conference/>

National Environmental Events and Conferences

- October 12-15 - North American Association for Environmental Education Conference - Raleigh-Durham - <http://www.naaee.net/conference>

EE Curricula (more examples at <http://www.meea.org/curriculum.shtml>)

Interactive Earth Science Animations

These educational animations contain text, graphics, and video links on earthquakes, volcanoes, and earth structure. Produced by Incorporated Research Institutions for Seismology (IRIS) sponsored by the National Science Foundation. Over 20 animations, with translations in Chinese, Spanish and Welsh

http://www.iris.edu/hq/programs/education_and_outreach/animations

Online Journal for K-12 Teachers

The University of Florida will inaugurate a new online journal for K-12 science teachers in Fall 2011, called *Teaching Science*. The journal will be an open, peer reviewed, free online journal for K-12 teachers devoted to what works in the classroom. All teachers are encouraged to submit an article. They are looking for practical items like inquiry activities, integrated science experiences, successful partnerships or programs, themes of current issues in science education and content for teacher training. <http://www.cpet.ufl.edu/TeachingScience/>

Fall Monarch Migration – Elementary and Middle School

Are you ready to embark on a real-time, scientific journey to Mexico with monarch butterflies and other citizen scientists? This Fall Monarch Migration Guided Tour is your planning resource. Each step in this guide includes essential goals, lesson activities, instructional materials and more...everything you'll need to implement an inquiry-based learning experience for your students. Start with wonder...and discover the magic of monarch migration. http://www.learner.org/jnorth/tm/monarch/GuidedTour_RoadMap1.html

Fall Whooping Crane Migration – Elementary and Middle

Led by ultra-light airplanes, ten young Whooping cranes in the Class of 2011 begin their first journey south from Wisconsin to Florida in October! <http://www.learner.org/jnorth/tm/crane/indexCurrent.html>

Fall Hummingbird Migration – Elementary and Middle School

Ok, Journey North's website does focus on the spring migration, but the website includes lots of hummingbird lore and a place to track and report on the birds' fall migration back to Mexico. <http://www.learner.org/jnorth/humm/index.html>

How Seeds Travel Lesson Plans – 718 plans submitted by teachers – K-6th Grade

We plant seeds in the spring, but many plants set seed in the fall. Consider putting together a lesson that involves collecting, sorting, storing and saving seeds to plant next spring. Lesson Planet's list of teacher submitted lesson plans will be sure to spark some ideas for you! Keep an eye out for Milkweeds, collect their seeds and plant a Monarch way station for next year. <http://www.lessonplanet.com/search?keywords=how+seeds+travel&media=lesson>

National Geographic's Environmental Literacy Series – Upper Elementary and Middle School

One Ocean, Changing Climate, Energy Potential and Earth's Fresh Water help prepare teachers to cover these environmental topics in the classroom.

<http://education.nationalgeographic.com/education/program/environmental-literacy-guides/>

National Geographic's Don't Be Fooled by a Photograph – 6th to 8th grade

In this lesson, students will study images that we altered digitally, to create a desired effect. Students will discuss how a photograph conveys information, and how changing that photograph can change its message. This lesson plan is based on the National Geographic News story, "Shark 'Photo of the Year' Is E-Mail Hoax," which covers an urban legend based on a doctored photograph. <http://www.nationalgeographic.com/xpeditions/lessons/03/g68/hoaxphoto.html>

National Geographic's Explore the Spatial Patterns of Your Hometown – 6th to 8th grade

Spatial patterns are all around us, from the arrangement of plants in our yards to the positions of desks in our classrooms. The ability to recognize and describe patterns within the distribution of physical and human features on Earth is essential to developing a geographic perspective. In this lesson, students analyze the distribution of businesses and residences within their own communities in order to develop a more sophisticated understanding of already familiar places.

<http://www.nationalgeographic.com/xpeditions/lessons/03/g68/hometown.html>

National Geographic's What Can We Learn from Satellite Images – 9th-12th grade

Students will look at maps and satellite images to see how various settled parts of the Earth have changed over the past few decades. They will then draw maps of their hometown, showing how it might have looked in satellite images in the 1970s and today. This will probably require some research into their town's recent history.

<http://www.nationalgeographic.com/xpeditions/lessons/03/g912/landuse.html>

Crossing Boundaries: The Environment, Disease and Conflict in Asia – 9th – 12th grade

Physical and political boundaries play an important role in the world. They are conventions that have been created, adapted, and/or devised by nature and humans. So too, are a wide variety of other boundaries. These boundaries can act as national and/or international assets, but they can also act as impediments that restrict or prohibit the flow of resources, commerce, or intellectual property, or barriers that isolate people and divide nations. Finally, they can be the source of international compromise, cooperation, or conflict. Many boundaries play an important role in issues pertaining to environmentalism, epidemiology, and discord that might range from trade wars to military confrontations. In this lesson, students will learn about boundaries as they apply to matters of pollution, disease, and conflict within the continent of Asia, between Asian nations, and between Asian nations and members of the international community.

<http://www.nationalgeographic.com/xpeditions/lessons/15/g912/crossbound.html>

EE Jobs in the Midwest

Associate Director of Philanthropy. Deadline September 17. Nature Conservancy, Chicago IL Office. Contributes in the creation and implementation of strategies for the cultivation and solicitation of a portfolio of major gift prospects, including corporate, foundation, and/or individual donors. Works closely with development team to determine effective strategies for identified donors and prospects. Discusses assets proficiently and listens for opportunities for gifts of assets or other non-cash gifts, such as planned gifts and trade lands. Provides opportunity for donors to receive recognition and increase future giving opportunity. Understands and complies with all TNC gift-related policies and procedures. Involves and engages appropriate partners in the field and staff at the Worldwide Office, keeping them apprised of interactions, issues or concerns. Understands and complies with all TNC gift-related policies and procedures and ensures ethical compliance, as defined by the Association for Fundraising Professionals. Manages donors with a capability of \$100,000 over three years with a fundraising target of at least \$

1million. https://careers.nature.org/psp/P91HTNC_APP/APPLICANT/HRMS/c/HRS_HRAM.HRS_CE.GBL

Membership Report (count includes renewals due but not past due)

September 2011: 71 members (52 professional, 4/12 institutional, 4 retirees, 2 students, 1 lifetime) from June 2010

June 2011: 106 members (74 professional, 6/18 institutional, 7 retirees, 4 students, 1 lifetime) from March 2010

March 2011: 98 members (68 professional, 6/18 institutional, 7 retirees, 4 students, 1 lifetime) from Jan 2010

February 2011: 111 members (87 professional, 5/13 institutional, 6 retirees, 4 students, 1 lifetime) from Dec 2009

January 2011: 116 members (93 professional, 5/13 institutional, 6 retirees, 4 students) from Nov 2009

December 2010: 151 members (125 professional, 5/12 institutional, 7 retirees, 6 students, 1 lifetime) from Oct 2009

November 2010: 148 members (122 professional, 7/14 institutional, 6 retirees, 6 students) from Sept 2009

October 2010: 149 members (123 professional, 7/14 institutional, 6 retirees, 6 students) from Aug 2009

NEW AND RENEWING MEMBERS

- **Welcome to New Members!** Josh Pennington, Columbia; and Paula Champion, Mt Vernon
- **Thanks to Renewing Members!** Deb Ballin, St. Joseph; Erica Cox, Springfield; Mary McCarthy, Springfield, Eileen McManus, Kansas City; Nancy Snider, St. Louis; and Harry Lee Waters, Union

RENEWALS DUE (Name listed by mistake? Please email weaverjc@missouri.edu and I will correct the records):

- **November 2011** – James Sandfort, Melvin Johnson
- **October 2011** – Loring Bullard, Michael Kromrey,
- **September 2011** – Alan Pringle, Chelsea Shepard
- **August 2011** - Pat Holloway, Patrick Hosty, Mary McCarthy, Brandon Pople, Sharon Ruhnke
- **July 2011** – Amy Buechler, Rob Didriksen, Bernard Hill, Pamela Rodgers Hill, Amy Kilpatric, Carin Smith, John Sode, Laura Worstell
- **June 2011** – no renewals due

MEMBERSHIPS PAST DUE

- **May 2011** - Eric Arnold, Nadine Ball, Julie Fortson
- **April 2011** - Brian Peck
- **March 2011** –Scott Kelly, Regina Knauer, Kathleen May, Nancy McClintock, Doug Miller, Angela Pierce, Jeremy Soucy
- **February 2011** - Byron DeLear, Ilyana Eydelman, Misty Mitchell, Jamie Paige, Angelette Prichette, Herb Turner
- **January 2011** - Judy Horton
- **December 2010**- Kathleen Bockhorst, Ollie Bogdon, Jack Bowels, Tom Bratkowski, Colleen Crank, Nikki Davenport, Jim Denner, Li'Anne Drysdale, Jean Ducey, Matt Garrett, Jaclyn Johnson, Gail Johnston, Liz Lyons, Tori Mack, Judy Mitchell, Sarah Moonier, Kim Petzing, Cassandra Phillips, Nandini Rmaswamy-King, Priscilla Stotts, Gayla Tippet- Auten, Katie Zimmer.
- **November 2010**- Aileen Abbott, David Bruns, Lorna Domke, Donna Dupske, Bridget Ebert, Sam Faith, Jamie Hubert, Bridget Jackson.
- **October 2010**- Denise Bumb, JoAnn Carnagey, Anna Clausen, Kelly Coiner, A. D. Daniels, Kara Debacker, Jennifer Fry, Melida Gutierrez, Joe Kleiber, Nicole Knipmeyer, Ruth Anne Parrott, Shanna Raerker, Jan Sassman, Hammons Schanda, Nancy Schanda, Sarah Schmitt, Cathy Wissehr.
- **September 2010** - Bobby Jamison, Trudy Swan, Diane Swift, Joan Twillman.

**RENEW your MEEA Membership TODAY! - ONLY \$15 Professional or \$7.50 Student/Retiree
at <http://www.meea.org/membershippaypal.html>**

or send check + changes in contact information to Jan Weaver, 208 Tucker-MU, Columbia MO 65211

Missouri Environmental Education Association on Facebook - 47 Friends

AMI invites MEEA members to their annual conference, STOM/MEEA Joint Conference,

MEEA has a new address:

**MEEA
P.O. Box 13
Columbia MO 65205 - 0013**



Missouri's Environmental Literacy Plan Open for Comment

The Federal No Child Left Inside Act of 2011 proposes to provide grants for environmental education for states that have an Environmental Literacy Plan (ELP) on file with their state department of education. The plan should be a comprehensive, integrated plan for incorporating environmental education into preK-12 schools developed by both education and resource experts. The plan should meet these three objectives...

1. Prepare students to understand, analyze, and address the major environmental challenges facing the students' State and the United States.
2. Provide field experiences as part of the regular school curriculum and create programs that contribute to healthy lifestyles through outdoor recreation and sound nutrition.
3. Create opportunities for enhanced and ongoing professional development for teachers that improves the teachers' a) environmental subject matter knowledge; and b) pedagogical skills in teaching about environmental issues including the use of interdisciplinary, field-based and researched-based learning and innovative technology in the classroom.

... and should incorporate these six elements:

1. Specific content standards, content areas, and courses or subjects where instruction takes place
2. A description of how state high school graduation requirements will ensure graduates are environmentally literate
3. A description of programs for professional development of teachers
4. A description of how the state education agency will measure the environmental literacy of students
5. A description of how the state education agency will implement the plan, including funding and other support
6. Plans and resources for school facilities and grounds

MISSOURI ELP GOALS + STRATEGIES (Draft June 6, 2011) --- EE = Environmental Education

Goal 1 - Missouri Students Will be Environmentally Literate (Elements 1, 2 and 4)

- Strategy 1. Determine how EE is actually implemented in Missouri schools.
- Strategy 2. Identify barriers to teaching EE in Missouri schools
- Strategy 3. Develop resources for overcoming barriers discovered in Strategy 2
- Strategy 4. Evaluate student performance on measures of environmental literacy using multiple strategies.

Goal 2 - Formal and Non-Formal Educators Will Understand and Use Best Practices in EE (Element 3)

- Strategy 1. Set nationally aligned, state approved standards for EE certification in Missouri
- Strategy 2. Create pathways and courses for EE certification.
- Strategy 3. Engage pre-service teachers in EE certification through college programs.
- Strategy 4. Engage in-service teachers in EE certification through professional development.
- Strategy 5. Engage non-formal educators in EE certification through professional development.

Goal 3 - Educational Settings and Resources Will Foster Environmental Literacy (Element 6)

- Strategy 1. Create a state recognized "Green Ribbon Schools" program for schools.
- Strategy 2. Ensure Missouri students participate in a high-quality outdoor educational experiences in elementary, upper elementary/middle and high school (3 times in their school career).
- Strategy 3. Ensure school yard programs are supported in all districts.
- Strategy 4. Create a web-based database for curricula and other environmental education resources.
- Strategy 5. Create stand-alone environmental science courses for use in middle and high school settings as well as through virtual programs.
- Strategy 6. Create a Missouri EE Grants Program.

Goal 4 - Environmental Education in Missouri Will be Sustainable (Element 5)

- Strategy 1. Create a State EE Unit within the Department of Elementary and Secondary Education (DESE).
- Strategy 2. Create a State EE Interagency Committee (SEEIC) to coordinate state level EE efforts.
- Strategy 3. Create a State EE Advisory Board (SEEAB) to coordinate state organization efforts.
- Strategy 4. Develop sustainable funding streams for the State Office of EE, the Missouri EE Association (MEEA) and other environmental education providers.

The complete draft plan and list of team members who participated in drafting the plan can be downloaded at <http://www.meea.org/aboutee.shtml> - click on Federal "No Child Left Inside"

WE ARE SEEKING COMMENTS ON THE DRAFT PLAN ON OR BEFORE OCTOBER 31, 2011. PLEASE CONTACT JAN WEAVER, weaverjc@missouri.edu or 573-424-9438 IF YOU HAVE A QUESTION, OR COMMENT. COMMENTS CAN ALSO BE SHARED AT MEEA'S FACEBOOK PAGE.

STOM/MEEA Joint Conference October 7 and 8, Lange Middle School, Columbia

The Science Teachers of Missouri and the Missouri Environmental Education Association Joint Conference will take place from Friday October 7 thru Saturday October 8 at Lange Middle School in Columbia Missouri. Friday night begins with a "Science Matters Night" from 5:30 to 7:00 pm, where the public and attendees are welcome to enjoy science activities with middle school students from Lange. This will be followed by a tour of the Physics Building Observatory at the University of Missouri. Saturday is packed with presentations (see *schedule below, titles shortened to fit*) and a keynote luncheon address by Dr. Angela Speck - **"Pluto: It's Demise and Resurrection**. Lunch, from 11:45 am to 1:20 pm also includes a welcome by Dr. Chris Belcher, Columbia Public Schools Superintendent and Awards. The day wraps up with a presentation at 5:15 by Shaun Bates, Science Education Consultant with the Office of College and Career Readiness at DESE.

TO REGISTER, VISIT <http://www.stom.org/events.php?action=eventDetails&eventUID=71>

A - all ages, EI - elementary, UE - upper elementary, M - middle, H - high, S/A - supervisor/administrator
G - general, B - biology, C - chemistry, P- physics, Es - earth science, **Ev - environmental**

8:30 to 10:00 am	10:10 to 11:40 am	1:30 to 3:00 pm	3:30 to 5:00 pm
1. Top 10 Reasons to Write in Science (EI, G)	1. Experimental Design Using the 4 Question Strategy (M, G)	1. Our World, Our Future (EI, G, Ev)	1. Using Proeware to Stimulate Student Interest in Science (A G)
2. Supporting Success of All Students in Science (EI, G)	2. Integrating STEM Education and Workforce Development (EI, G)	2. From Me to We! (A, G)	2The Presidential Award - Recognizing Good Teaching (A, G)
3. Assessing Alternative Perceptions to Guide Instruction (M, G)	3. Space Medicine and Human Factors (H, B, C)	3. Wild Music - Using Music and Motion to Teach Natural Science (EI, G)	3. A Science Picture is Worth a Thousand Words... (M & H, G)
4. Improving Assessments, Increasing Rigor (H, G)	4. Assessing Student Scientific Literacy (H, G)	4. Incorporating the Future in Science Classes Using Maps in Medicine (H,B)	4. Using Glogster and Prezi in a Science Classroom (M & H, G)
5. Thermodynamics and Molecular Rearrang. (H, C)	5. Come See What the Fun is About (M & H, G)	5. Making Cell Parts Relevant (H, B)	5. Beyond Probes (H, P)
6. Growing with Plant Science (m & H, B)	6. Begin With a Story: Implementing Problem-Solving Scenarios to Teach (H, B)	6. "Accelerate" Student Success with Fun Formatives for Physics First (H, P)	6. Teaching and Learning in the 21st Century (M, H & S/A, G)
7. Using Predict, Share, Observe and Explain to Support Physical Science (M & H, P, C)	7. Labs, Labs and More Labs for HS Science in a Digital Environment (H, B, C, P)	7. Teaching MS Science with a Digital Curriculum (M, B, C, P)	7. Electricity for Everyone (UE, M & H, P)
8. New Madrid Earthquakes (M & H, Es)	8. Modeling Motion Diagrams (H, P)	8. Blood Spatter Analysis (H, B, P)	8. Using 5Es to Teach Chemistry to MS (M, C)
9. What Do Engineers Really Do (A, G)	9. Modeling Acceleration Using a Spark Timer (H, P)	9. Enhancing Conceptual Understandings (H, C)	9. Standards Based Science (UE, M & H, G)
10. Video Analysis with Logger Pro Dummies (H,P)	10. Ocean Circulation (A, Es)	10. Ocean Tides (A, Es)	10. Bioengineering (H, B)
11. Insider Tips: Resources and Field Trips to Informal Science Centers (A, G, Ev)	11. Use Technology to Learn about Nature (A, Ev)	11. Schoolyard with a Technology Twist (E & M, Ev)	11. Evaluating and Creating Environmental Education Materials (A, Ev)
12. MO Department of Natural Resources Science Camp (M, Ev)	12. The Columbia Outdoor Classrooms Environmental Education Demonstration Project (E & M, Ev)	12. Designing Formative Assessment Probes for Environmental Earth Science (E, Ev)	12. Inquiry Principles Through Community and Future Problem Solving (A, G, Ev)
	13. Educational Resources for MO River (A, B, Ev)	13. Stop at this Station (and Think) (M & H, P)	13. Endangered Species of the Missouri River (A, B, Ev)

In 1999 the North American Association for Environmental Education (NAAEE) developed a set of **COMMON** guidelines for what students in 4th, 8th and 12th grades should know to be environmentally literate. 12th Grade outcomes are below.

1) Questioning, Analysis and Interpretation Skills

- A. Questioning – develop, modify, clarify, and explain ? that guide env investigations, factors that influence ?
- B. Designing Investigations – develop approaches for investigating env ?, even unfamiliar ones
- C. Collecting Information –locate, collect reliable info, using technology to access, gather, store, display data
- D. Evaluating Accuracy, Reliability – use basic logic, reasoning to evaluate completeness and reliability of info
- E. Organizing Information – organize and display info in ways appropriate to purpose
- F. Working With Models and Simulations – create, use, evaluate models for understanding
- G. Drawing Conclusions and Developing Explanations – use evidence, logic to develop explanations

2) Knowledge of Environmental Processes and Systems**2.1 The Earth as a Physical System**

- A. Processes that Shape Earth - major physical processes that shape the earth, relations to earth characteristics
- B. Changes in Matter - application of chemical reactions to environmental characteristics, everyday phenomena
- C. Energy –application of energy and matter concepts to phenomena in the world

2.2 The Living Environment

- A. Organisms, Populations and Communities - basic population dynamics, importance of diversity
- B. Heredity and Evolution - basic ideas and genetic mechanisms behind biological evolution
- C. Systems and Connections - – living environment is comprised of interrelated, dynamic systems
- D. Flow of Matter, Energy - accounting for env characteristics based on interaction of matter and energy

2.3 Humans and Their Societies

- A. Individuals, Groups – influence of individual, group actions on environment, how groups can work to promote and balance interests
- B. Culture – cultural perspectives and dynamics, apply these in context
- C. Political and Economic Systems – how different P and E systems account for, manage, affect environment
- D. Global Connections – analyze global, social , cultural, political, economic, environmental linkages
- E. Change and Conflict – functions of public processes for promoting, managing change, conflict, effects on env

2.4 Environment and Society

- A. Human/Environment Interaction – humans alter environment to meet needs, limits to environment
- B. Places – humans endow “places” with meaning through their interactions with its environment
- C. Resources – importance, use of resources changes over time and with different econ systems and tech
- D. Technology – social, environmental impacts of technology
- E. Environmental Issues – range of env issues at scales local to global, linkages of issue and scale

3) Skills for Understanding and Addressing Environmental Issues**3.1 Skills for Analyzing and Investigating Environmental Issues**

- A. Identifying and Investigating Issues – local to global
- B. Sorting Out Consequences of Issues – evaluate consequences of env change, conditions for humans, env
- C. Identifying and Evaluating Alternative Solutions, Courses of Action
- D. Working With Flexibility, Creativity, Openness – engage in peer review in spirit of open inquiry

3.2 Decision Making and Citizenship Skills

- A. Forming, Evaluating Personal Views – communicate, evaluate, justify own views on env issues, solutions
- B. Evaluating Need for Citizen Action – is citizen action needed, should they be involved
- C. Planning and Taking Action – planning for action based on research, analysis, within scope of their rights, consistent with abilities and responsibilities as citizens
- D. Evaluating Results of Actions

4) Personal and Civic Responsibility

- A. Understanding Societal Values, Principles – analyze influence of shared and conflicting societal values
- B. Recognizing Citizens' Rights and Responsibilities – importance of exercising citizen rights and responsibilities
- C. Recognizing Efficacy – realistic self-confidence in their effectiveness as citizens
- D. Accepting Personal Responsibility – recognition, acceptance that actions can have broad consequences, changing actions when necessary

To download a free set of the complete guidelines, visit <http://eelinked.naaee.net/n/guidelines/topics/Excellence-in-EE-Guidelines-for-Learning-K-12> (scroll down to the middle of the page). Bound copies available for a small fee.

Under a business as usual scenario, where little or no effort is made to reduce emissions and CO2 accumulates to 970 ppm (parts per million) in the atmosphere, mid-Missouri will be more like the Dallas-Fort Worth area by mid century and like the Laredo area by the end of the century. If we make an effort, and hold emissions down so CO2 just accumulates to 550 ppm CO2, it will be like Fort Smith Arkansas by mid century and then like the Dallas-Fort Worth area. Initially, there may be more rainfall, but it will be more episodic and more likely to cause floods than to recharge aquifers and restore soil moisture. However, by the end of the century, increasing evaporation will dry out surface and soil moisture, making the state dryer overall.

Our plant hardiness zones have already changed. In 1990 the lowest range of winter temperatures was -20 to -10°F in the top 2/3 of the state, and -10 to 0°F in the bottom third. Now the coldest it gets in northern Missouri is -10°F, and in the southern most parts of the state it doesn't fall below 0°F (on average). This might seem like a good thing, but warmer winters also mean more insects can overwinter or have multiple generations, including insects that are major agricultural pests. For example, the Southwestern Corn Borer and Alfalfa Weevil get into Missouri, but cold temperatures currently limit how much damage they do to crops.

Inevitably, what we grow would have to change. Our leading agricultural products are corn, soybeans, hogs and cattle. In Arkansas the major agricultural products are rice and chickens, with some soybeans, cattle and corn. In Texas, they are cotton, corn, wheat and cattle. Soybeans don't even make the list in Texas. Warmer weather will also affect fruit crops, possibly increasing the incidence of diseases like Anthracnose, decreasing periods of winter chilling required by some plants to bloom, and affecting fruit pH, sugar content and texture in ways that make it unmarketable.

In addition to impacts on agriculture, climate change will shift the habitats of economically important tree species in our \$5 billion timber industry. In the Ozarks, we'll see declines in White Oak and Black Oak habitat of a third to nearly half. Pignut Hickory, Sugar Maple and even Dogwoods will also disappear from many places as the climate becomes warmer and drier. These species might be replaced with Bur Oak, Short Leaf Pine (2/3 to 1/2 value of oak), Mockernut Hickory, Eastern Red Cedar and Redbud. What we don't know is how the replacement would happen, but it is not likely that the more tolerant species will move in as fast as the less tolerant species disappear. Instead, as existing trees become more stressed by temperatures and drought, they may become more vulnerable to insects and more likely to die, leaving the extensive forests of the Missouri Ozarks full of standing dead trees, increasing the likelihood of forest fires.

Climatic change will mean better habitat for Vultures, Red-tailed Hawks, Nighthawks, Mockingbirds, Great Blue Herons and Ruby-throated Hummingbirds. On the other hand, Robins, Cardinals, Pileated and Red-headed Woodpecker habitat will decline by 25% in parts of their Missouri range, Black-capped Chickadees, Whippoorwills, and Killdeer habitat will be down by half, and Goldfinch and Baltimore Oriole habitat by 75%. This is just a sampling of Missouri species, but birds play a key role in controlling insect pests, and spreading seeds, and the effects of their decline, disappearance or replacement may have impacts that spread throughout the state's natural

and managed communities - forests, grasslands, farms, pastures and cities.

Even though we don't live on the seacoasts or in the arctic, global climate change will affect Missourians. It will dry up our streams and rivers, lower our water tables, increase flooding, make several of our most common crops harder to grow, decrease the value of our forests and transform what we think of as typical Missouri ecological communities from the bootheel of the southeast to the loess hills of the northwest.

More Common	Less Common
Southwestern corn borer Alfalfa Weevil Anthracnose Blackberries	Soybeans Apples Raspberries
Bur Oak Short Leaf Pine, Mockernut Hickory Eastern Red Cedar Redbud	White Oak, Black Oak, Pignut Hickory, Sugar Maple, Dogwood
Turkey Vulture Red-tailed Hawk Nighthawk Mockingbird Great Blue Heron Ruby-throated Hummingbird	Robin Cardinal Pileated Woodpecker Red-Headed Woodpecker Black-capped Chickadee Whippoorwill Killdeer Goldfinch Baltimore Oriole

Hotter Temperatures in Missouri - ppp.missouri.edu/newsletters/meg/archives/v14n8/a2.pdf
 Integrated Crop Pest Management Newsletter - ppp.missouri.edu/newsletters/ipcm/archives/fullissue/v21n5.pdf
 Agricultural Forecasts - http://farministrynews.com/mag/farming_climate_change_winners/
 Tree Forecasts - http://www.nrs.fs.fed.us/atlas/tree/tree_atlas.html
 Bird Forecasts- <http://www.nrs.fs.fed.us/atlas/bird/index.html>
 MO Nat Res Conference Findings on Climate Change- <http://www.columbiainmissourian.com/stories/2009/03/09/changing-face-missouri/>

Have Topic ideas you would like to share? Contact weaverc@missouri.edu

Professional Development Workshops (for next few weeks –visit website for full calendar)

Sorted first by region - NW to SE - then by date; date, title, MEEA Category -(1), (2) or (3) - location - webpage or email
MEEA Workshop Categories - Category 1: environmental education objectives; includes at least three activities; furnishes background information; supplies resources or references; incorporates a glossary; and includes an evaluation. These workshops must be approved by MEEA. **Workshops already approved for college credit are automatically approved for Category 1 Workshops.** Category 2: structured outdoor experiences. Category 3 : EE resources. Some workshops may have fees. College credit courses will have tuition fees. Some workshops have pre-registration deadlines, act quickly if you would like to attend. Additional workshops at <http://www.meea.org/profdevcalendar.shtml>. Certification Program information at <http://www.meea.org/certification.shtml>

Northwest (Cameron, St. Joseph, Maryville, Trenton)

- September 10 to 11 - Discover Nature Families, Catfish Camp (2)- 9:00 am, Ted Shanks and DuPont Reservation Conservation Areas - <http://mdc.mo.gov/events/region/04/heading/Northeast>

Northeast (Hannibal, Kirksville, Macon, Mexico, Moberly)

- September 10 - Catfish Camp (2)- 9:00 am, Ted Shanks and DuPont Reservation Conservation Areas - <http://mdc.mo.gov/events/region/04/heading/Northeast>
- October 1 - Burn Workshop (2)- 9:00 am to Noon, Lion's Club Building, Unionville, rsvp Craig Williamson 660-216-1588 - <http://mdc.mo.gov/events/region/04/heading/Northeast>

Kansas City (Blue Springs, Excelsior Springs, Grandview, Gladstone, Kansas City, Lee's Summit, Liberty, Sedalia, Warrensburg)

- September 8 - Discover Nature Women: Backpack Trip Orientation (2)- 6:00 pm to 8:00 pm, Burr Oak Woods Nature Center, women and girls 14 to 17 years with adult woman - <http://mdc.mo.gov/regions/kansas-city/burr-oak-woods-nature-center>
- September 13 - Maintain your Ride (basics of keeping your bike in shape)(3) - 6:00 pm, 2050 West Penway terrace, Tony Acuirre Community Center, Kansas City, \$25- <http://bikewalkkc.org/civcrm/event/info?reset=1&id=51>
- September 17 - Monarch Tagging (3)- 10:00 am to 1:00 pm, Burr Oak Woods Nature Center, adults and families, classes 1 hour on the hour - <http://mdc.mo.gov/regions/kansas-city/burr-oak-woods-nature-center>
- September 17 and October 1- Beginning Backpack Class Series Parts 1 and 2(2)- 5 hour class, \$50 per person - <http://missouri.sierraclub.org/thb/outings/index.html#Sep17>

Central (Columbia, Rocheport, Jefferson City, Marshall)

- September 17 - Volunteer Water Quality Monitoring Workshop: Level 1(2) - 8:30 am to 5:00 pm, MDC Camdenton Office, 783 Thunder Mountain Road, registration deadline September 7 - http://www.mosteamteam.org/wqschedule_level1.asp
- September 17 - Sketch Day: Drawing the Sycamore (3)- 11:00 am to Noon, Runge Nature Center, Jefferson City, 10 years and up - <http://mdc.mo.gov/events/location/Runge/heading/Runge%20Nature%20Center>
- September 17 - Prairie Botany Workshop at Tucker Prairie (3)- 10:00 am to 3:00 pm, 2.5 mi west of I-70 and 54 junction (Kingdom City), \$24 - <http://www.moprairie.org/Events.html>
- September 18 - Sustainable Living Fair: Grounding Sustainability in Localization (3)- 11:00 am to 6:00 pm, Columbia College Student Commons, Columbia - <http://www.slfcolumnia.org/>

St. Louis (St. Louis, St. Louis Co Cities, Sullivan, Washington)

- September 10 - Conservation Quest: Celebrating Forests (2 or 3)- 10:00 am to 3:00 pm, Columbia Bottom Conservation Area, teams of 2 to 4 solving forest challenges, bring sack lunch, 12 and up - <http://mdc.mo.gov/events/location/Columbia%20Bottom/heading/Columbia%20Bottom>
- September 10 - Wildflower Identification and Ecology (2 or 3)- 9:00 am to Noon, Shaw Nature Reserve, \$19 non member - https://www.mobot.org/iebms/coe/coe_p1_all.aspx?&oc=10&cc=educlasses#NATURESTUDY
- September 14 - Backyard Chickens (3)- 7:00 pm to 8:30 pm, Commerce Bank Center for Science Education, rm 126, \$30 for nonmembers - https://www.mobot.org/iebms/coe/coe_p1_all.aspx?&oc=10&cc=educlasses#GREENLIVING
- September 15 - St. Charles Complete Streets Advocacy Training (3) - 6:00 pm to 8:30 pm, O'Fallon City Hall - <http://www.trailnet.org/events>
- September 15 or 16 - Native Seed Collecting, Cleaning and Storage (2) - 1:00 to 4:00 pm, Shaw Nature Reserve, Gray Summit, \$15, reservations required - <http://www.shawnature.org/nativeland/NativePlantSchoolHomeownerSeries.aspx>

Southwest (Bolivar, Branson, Carthage, Joplin, Lebanon, Marshfield, Monett, Nixa, Ozark, Springfield)

- September 9 thru 11 - Free Camping Weekend, includes activities and demonstrations (3) - Lake Springfield Park, all ages - <http://www.parkboard.org/calendar.htm>

- September 22 to 23 - E3 Conference: Bringing Green to the Mainstream, Keynote Dean Johnson, Hometown Video Publishing (3)- <http://www.ozarksnewenergy.org/site/>

Ozark (Cabool, Eminence, Huston, Mountain Grove, Rolla, Saint James, Salem, Waynesville, West Plains, Willow Springs, Winona)

- September 9 to 11- Great Outdoors Weekend (2 or 3)- YMCA of the Ozarks - <http://www.ymcaoftheozarks.org/calendar/1871-great-outdoors-weekend>

Southeast (Cape Girardeau, Doniphan, Farmington, Hayti, Ironton, Jackson, Kennet, New Madrid, Piedmont, Poplar Bluff, Sikeston)

- September 7 - Senior (55 and up) Exploration (herps, nature games, crafts) (2 or 3)- 9:00 am to 11:00 am or 2:00 pm to 4:00 pm, Cape Girardeau Conservation Nature Center - <http://mdc.mo.gov/events/location/Cape%20Girardeau/heading/Cape%20Girardeau%20Nature%20Center>
- September 24 - Connecting People with the Land: National Archaeology Month and National Hunting and Fishing Day (3)- 9:00 am to 4:00 pm, Cape Girardeau Conservation Nature Center, hands on activities and demonstrations, all ages - <http://mdc.mo.gov/events/location/Cape%20Girardeau/heading/Cape%20Girardeau%20Nature%20Center>
- September 25 - Autumn Birding (2 or 3)- 9:00 am to 4:00 pm, Cape Girardeau Conservation Nature Center, all ages - <http://mdc.mo.gov/regions/southeast/cape-girardeau-conservation-nature-center>
- October 1 - Day on the River(2 or 3)- 9:00 am to 4:00 pm, Cape Girardeau Conservation Nature Center, crafts, animals, rides on the Mississippi, all ages - <http://mdc.mo.gov/regions/southeast/cape-girardeau-conservation-nature-center>

Statewide

- September 12-15 - Association of Missouri Interpreters Conference (3) - Farmington - http://www.mointerp.net/?page_id=8
- October 7 and 8 - Science Teachers of Missouri/Missouri Environmental Education Association Joint Conference (3)- Lange Middle School, Columbia - <http://www.stom.org/events.php?action=eventDetails&eventUID=71>

National

- September 12 - Environmental Education in Urban Communities(1) - Online course with Cornell University's Civic Ecology Lab - <http://civicecology.org/course-uee.php>
- October 12-15 - North American Association for Environmental Education Conference (1 or 3)- Raleigh-Durham - <http://www.naaee.net/conference>

Grants, Awards, Scholarships and Other Opportunities

- Lexus Eco Challenge.** *September 26, 2011 Challenge 1: Land/Water opens September 26, 2011, closes October 31, 2011; Air/Climate opens November 7, 2011, closes December 19, 2011; Final Challenge opens January 9, 2012, closes February 20, 2012.* \$10,000 each for Sixteen teams (2 middle school, 2 high school in each of the four Lexus market regions) for air/climate and land/water challenges, \$30,000 for grand prize winners. Design and implement a plan to address a local environmental issue, prepare and present a power point on your project. <http://www.scholastic.com/lexus/>
- Greenworks Grant.** *September 30, 2011.* \$1000. Applicants must have completed a Project Learning Tree Workshop. Project must involve service-learning, must exemplify student voice, must involve at least one community partner, and must secure at least 50% matching funds (in-kind acceptable). <http://www.plt.org/applyforagrant>
- PolarTREC.** *September 30, 2011.* 2 to 6 weeks participating in hands-on field research in the polar regions. K-12 teachers. <http://www.polartrec.com/about>
- Project Green Challenge.** *October 1 to October 30, 2011.* 10 finalists will win a round trip visit to San Francisco to participate in a 2-day educational summit. High school and college students. Students complete 30 steps to transition from conventional to conscious posting blogs, photos, videos, and using Facebook, Twitter and other media to share experiences. <http://www.teensturninggreen.org/about-us/project-green-challenge.html>
- Toshiba K-5 Grades Grants.** *October 1, 2011.* \$1000. Public and private (nonprofit) teachers for a set of lessons and/or hands on project they would like to teach. <http://www.toshiba.com/taf/k5.jsp>
- Subaru Healthy Sprouts Award.** *October 1, 2011.* \$500 gift certificate for supplies. Schools or organizations planning on gardening with at least 15 children between the ages of 3 and 18. <http://www.kidsgardening.org/grants/2011-subaru-healthy-sprouts-award>
- Lowe's Toolbox for Education Grant Program.** *October 14, 2010 or when 1500 applications have been received.* Up to \$5000 for your school. Any non-profit public K-12 school (older than 2 years) or parent group associated with such a school (must be 501 (c) (3). For permanent facility enhancement (indoor and outdoor), landscaping, clean ups. Not memorials, stipends, salaries, scholarships. <http://www.toolboxforeducation.com/>

- **Earth Science Week Photography, Visual Arts and Essay Contest.** October 15, 2011. Photograph "A World of Change In My Community" anyone, \$300; Visual Arts "Picturing Our Ever-Changing Earth", K-5, \$300; Essay "How Change Shapes Our Planet", 6-9 grade, \$300. Submissions include permission to post on the American Geological Society website. <http://www.earthsciweek.org/contests/>
- **Lorrie Otto Seeds for Education.** October 15, 2011. \$100 to \$500 for establishing and maintaining native plant community, interpretive trail or wetland area. <http://www.for-wild.org/seedmony.html>
- **Recycle-Bowl.** October 17 thru November 12, 2011. \$1000 for state winners, \$2,500 for national winner. K-12 schools. Competition to see which schools can recycle the most. <http://recycle-bowl.org/overview/>
- **National Association of Conservation Districts Auxiliary Photo Contest.** December 1, 2011. \$50. Amateur photographers who are U.S. residents, youth and adult divisions. Subjects: conservation practices, close up conservation, conservation in action, agriculture and conservation across america. <http://www.nacdnet.org/education/contests/photo/>
- **Schoolyard Habitat Program .** December 12, 2011. Up to \$8000. Kindergarten through 12th Grade Students The Schoolyard Habitat Program, an initiative of the US Fish & Wildlife Service (FWS), helps teachers and students create wildlife habitat at their own schools. Typical projects include: wetlands, meadows, forests and variations based on specific ecoregions. <http://www.classroomearth.org/node/1893>
- **Apprentice Ecologist Initiative.** December 31, 2011. \$850 for 13 to 21 year olds for a project (clean up, tree planting, etc.) and essay and photo-essay describing project. http://www.wildernessproject.org/volunteer_apprentice_ecologist.php For other resources, visit **EE Link - <http://eelink.net/grants-generalinformation.html> or <http://www.grantwrangler.com/index.html>**

Calendar of Outdoor, Nature, Environmental and Sustainability Events

Due to the LARGE number of events taking place around the state, only a small number of events are included. However you can visit <http://www.meea.org/events.shtml> where the list will continue to be updated at a fairly regular rate.

Northwest Region

- September 24 - Fall Outdoor Discovery Day - noon to 4:00 pm, Crowder State Park - <http://www.dnr.mo.gov/calendar/public/calendarParksSearchDetail.do?eventId=10303>
- October 15 - 5K Flood Run and Crawfish Crawl and Family Day - registration at 8:00 am, Squaw Creek National Wildlife Refuge - <http://www.squawcreek.org/cgi-bin/events.cgi>

Northeast Region

- September 17 - Kirksville Conservation Keepers: Meet a Tree - 2:00 to 3:00 pm, MDC Northeast Regional Office, Kirksville, all ages - <http://mdc.mo.gov/events/region/04/heading/Northeast>
- September 19 - Knee High Naturalists: More than Trees - 10:30 am to 11:30 am, MDC Northeast Regional Office, Kirksville, 3 to 5 years - <http://mdc.mo.gov/events/region/04/heading/Northeast>

Kansas City Region

- September 11 - Green Fest (Bands, Speakers, Farmer's Market, Kids Activities,) - 10:00 am to 7:00 pm, Uptown Theatre, Kansas City - <http://www.maureenvetoslater.com/uptown-greenfest.html>
- September 24 - National Public Lands Day - 9:00 am to Noon, George Owens Nature Park, 1601 S. Speck Road, Independence - <http://www.ci.independence.mo.us/parksandrec/Calendar.aspx>
- September 24 - National Public Lands Day - 9:00 am to Noon, Hidden Valley Natural Area - <http://www.kcwildlands.org/egap.php?id=233#npid>
- October 8 - Green on Green Sustainability Fair - 9:00 am to 1:00 pm, Green Street in front of City Hall, Lee's Summit, includes mobile shredding event 9:00 am to 11:00 am- <http://cityofls.net/Environment.aspx>

Central Region

- September 18 - Sustainable Living Fair: Grounding Sustainability in Localization- 11:00 am to 6:00 pm, Columbia College Student Commons, Columbia - <http://www.slfcolumbia.org/>
- September 20 - Conservation Kids' Club: Wilderness Survival - 6:30 pm to 7:30 pm, Runge Nature Center, Jefferson City, 6 to 12 years - <http://mdc.mo.gov/events/location/Runge/heading/Runge%20Nature%20Center>

St. Louis Region

- September 10 - Conservation Quest: Celebrating Forests - 10:00 am to 3:00 pm, Columbia Bottom Conservation Area, teams of 2 to 4 - <http://mdc.mo.gov/events/location/Columbia%20Bottom/heading/Columbia%20Bottom>
- September 12 - Moonlight Over the Prairie - 7:00 pm to 8:30 pm, Columbia Bottom Conservation Area, 7 and up - <http://mdc.mo.gov/events/location/Columbia%20Bottom/heading/Columbia%20Bottom>
- September 13 - Dig N Dine at Deer Creek Park (invasive removal) - 5:00 pm to 7:00 pm, Deer Creek/Rocket Park, just north of Marshall on Laclede Station, Maplewood - http://mostreamteam.org/Whats_Happening.asp

Southwest Region

- September 10 - Lake Taneycomo Shoreline Cleanup - 9:00 am to 1:00 pm, Powersite Dam Park, Rockaway Beach near Rainbow Haven, other sites- http://mostreamteam.org/Whats_Happening.asp
- September 10 & 11 - Outdoor Days - Lake Springfield Park, check web calendar for times- <http://www.parkboard.org/calendar.htm>
- September 11 - 6th Annual Outfitters and Stream Team Niangua River LPU (Litter Pickup) - 9:30 am, Bennett Spring Public Access, Outfitters will furnish canoes, picnic to follow - http://mostreamteam.org/Whats_Happening.asp
- September 15 - Banff Mountain Film Festival World Tour - 7:00 pm, Gillioz Theatre, Springfield, fundraiser for James River Foundation - <http://www.springfieldfilmfest.com/>

Ozark Region

- September 9 to 11- Great Outdoors Weekend - YMCA of the Ozarks - <http://www.ymcaoftheozarks.org/calendar/1871-great-outdoors-weekend>
- September 16 to 18 - Night Sky Over Trout Lodge - YMCA of the Ozarks - <http://www.ymcaoftheozarks.org/calendar/1870-night-sky-over-trout-lodge-weekend>
- September 17 - Scout Patch Program - 10:00 am, Onandaga State Park - <http://www.dnr.mo.gov/calendar/public/calendarParksListAction.do?parkNm=Onondaga%20Cave%20State%20Park>

Southeast Region

- September 6 - Wild Edibles - 6:30 pm to 8:00 pm, Cape Girardeau Conservation Nature Center, 16 and up - <http://mdc.mo.gov/regions/southeast/cape-girardeau-conservation-nature-center>
- September 17 - Wildflower Garden Tours - 9:00 am and 10:30 am, Cape Girardeau Conservation Nature Center, all ages - <http://mdc.mo.gov/regions/southeast/cape-girardeau-conservation-nature-center>
- September 22 - Nature Center at Night - 5:00 pm to 8:00 pm, Cape Girardeau Conservation Nature Center, all ages - <http://mdc.mo.gov/regions/southeast/cape-girardeau-conservation-nature-center>
- September 24 - Connecting People with the Land: National Archaeology Month and National Hunting and Fishing Day - 9:00 am to 4:00 pm, Cape Girardeau Conservation Nature Center, hands on activities and demonstrations, all ages - <http://mdc.mo.gov/events/location/Cape%20Girardeau/heading/Cape%20Girardeau%20Nature%20Center>

Environmental and Environmental Education News Roundup

PBS: Oceans Face Mass Extinctions, New Report Warns.

(Hari Sreenivasan, June 22, 2011) - When 27 marine experts from a half-dozen countries met in England this April for a workshop on the state of the oceans, they knew the news would not be good. But seeing the data on overfishing, acidification, chemical pollution, temperature increases, coral reef extinction and climate change, and -- most importantly -- seeing all the data together gave even the most sober academic among them a cause for concern. In a new report, the group finds that human impact is changing the ocean in ways faster than predicted, and not for the better. There is significant concern that sensitive ecosystems may suffer devastating consequences if things don't change quickly and the scientists are ringing an alarm. <http://www.pbs.org/newshour/rundown/2011/06/oceans-face-mass-extinctions.html>

PBS: Heat Wave Imperils Midwest Agriculture.

(Justin Scuiletti, July 28, 2011) - Temperatures have been rising in the Midwest this summer -- and with them, food prices may also be heading upward. As heat waves have been blanketing much of the nation in temperatures over 100 degrees, agriculture has been suffering as farmers across states such as Kansas, Texas, and Oklahoma have seen their crops decimated in a summer that had already brought a hazardous drought. The lack of water has proven especially disastrous for a late-pollinating corn crop, which has forced many farmers to abandon their plantings because in many cases even irrigation can not provide the water quickly enough before the moisture in the soil evaporates. <http://www.pbs.org/newshour/rundown/2011/07/newshour-connect-heat-wave-has-midwest-agriculture-melting-food-prices-rising.html>

PBS: How Will New Fuel Efficiency Rules Affect Consumers? July 29, 2011

(Mike Melia, July 29, 2011) - President Obama, flanked on stage by executives from the country's leading automakers, announced new fuel economy standards for cars and light trucks Friday that would double the current requirement to 54.5 miles per gallon (mpg) by 2025. The new rules were largely praised by both industry and environmental groups. <http://www.pbs.org/newshour/rundown/2011/07/how-will-new-fuel-efficiency-rules-affect-consumers.html>

PBS: New Widget Tracks Record-Breaking High Temperatures.

(News Desk, Aug. 1, 2011) - Using data collected by the NOAA's National Climatic Data Center, the PBS News Hour has set out to track the number of high temperature records set each day of the year across the United States. We've built this

widget so our viewers can understand the significance of the heat, not only in terms of raw degrees, but in a format that compares today's temperatures to previous record highs. The widget is built to be embedded into any website, and the data behind it will be updated every day.

<http://www.pbs.org/newshour/runtdown/2011/08/is-this-record-breaking-record-breaking-heat.html>

EPA: Kansas City, Mo., Metropolitan Energy Center Selected to Receive \$300,000 Green Jobs Grant

(Kansas City, KS, July 28, 2011) - EPA Region 7 Administrator Karl Brooks and Kansas City, Mo., Mayor Sly James today recognized the Metropolitan Energy Center (MEC) for being selected to receive a \$300,000 Environmental Workforce Development and Job Training Grant from EPA.

[http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Grants!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press%20Releases%20-%20Grants!OpenView)

EPA: Metropolitan St. Louis Sewer District in Missouri to Pay \$4.7 Billion to Cut Sewer Overflows

(Kansas City, KS, Aug. 4, 2011) - The Metropolitan St. Louis Sewer District (MSD) has agreed to make extensive improvements to its sewer systems and treatment plants, at an estimated cost of \$4.7 billion over 23 years, to eliminate illegal overflows of untreated raw sewage, including basement backups, and to reduce pollution levels in urban rivers and streams, the Department of Justice and the U.S Environmental Protection Agency (EPA) announced today. This injunctive relief is historic in its scope and importance to the people of St. Louis.

[http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Compliance and Enforcement!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press%20Releases%20-%20Compliance%20and%20Enforcement!OpenView)

EPA: Grant of \$30,000 to Help Chemical Facilities in Missouri Comply with Regulations

(Kansas City, KS, Aug. 9, 2011) - EPA has awarded the Missouri State Emergency Agency (SEMA) \$30,000 to assist with outreach, education and implementation of the Clean Air Act's Risk Management Program. All chemical facilities that handle, process or store a threshold quantity of 500 to 20,000 pounds of regulated chemicals are subject to EPA's chemical accident prevention requirements.

[http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Grants!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press%20Releases%20-%20Grants!OpenView)

MDC: USFW Service proposes reintroducing American Burying Beetle at Wah'Kon-Tah Prairie

(Bill Graham, Jefferson City MO, Aug. 9, 2011) - American burying beetles feed on dead animals. Their name stems because they have the ability to bury a dead field mouse or a bird the size of a dove up to a foot deep to protect their food from other scavengers. A fast-growing, black and orange insect that reaches more than an inch in length, they're also among the few insect types that feed and care for their young. They regurgitate food to larvae, much like how some birds feed their young. <http://mdc.mo.gov/newsroom/amazing-endangered-beetle-proposed-wah-kon-tah-prairie>

MDC: Hummingbird Numbers Increasing as Birds Migrate South

(Tim Smith, Jefferson City MO, Aug. 12, 2011) - Missouri's hummingbird feeders should become busier places in the next few weeks, as additional ruby-throated hummingbirds move into our area from more northern states. The ruby-throated hummingbird is our only common hummingbird species. Note that only the mature males have the ruby throat. Our hummingbird numbers are greatest from August to late September. The number of birds that migrated north in the spring now have been augmented by the young birds that were hatched and fledged this year. As the birds move south, they will linger at nectar feeders. <http://mdc.mo.gov/blogs/fresh-afield/hummingbird-numbers-increasing>

Cornell University: Cornell to Lead National Environmental Education Program

(Krishna Ramanujan, Ithaca, NY, Aug. 12, 2011) - Cornell has been selected to lead a national, five-year, \$10 million Environmental Protection Agency environmental education professional development program. Every five years, the EPA's Office of Environmental Education requests proposals to lead its national environmental education training program. This year Cornell's Civic Ecology Lab was selected, with funding of around \$2 million per year for five years.

<http://www.news.cornell.edu/stories/Aug11/EPAKrasny.html>

MDC: Teen wins scholarship from Master Naturalist Group

(Francis Skalicky, Lake of the Ozarks, MO, Aug. 16, 2011 - An ongoing interest in conservation has landed a 17-year-old Camdenton High School graduate a \$1,500 scholarship from the Lake of the Ozarks Master Naturalist Chapter. Scholarship winner Caitlin Shoults will be a freshman at Northwest Missouri State University in Maryville this fall and will have dual majors in Agricultural Sciences and in Wildlife Ecology and Conservation. She also plans to minor in Spanish.

<http://mdc.mo.gov/newsroom/teen-wins-scholarship-master-naturalist-group>



(L to R) Lake of the Ozarks Master Naturalist chapter president Cindy Gum, scholarship winner Caitlin Shoults and chapter member Lucy Silliman

EPA: EPA Region 7 Issues Decisions on Missouri's 2009 Water Quality Standards; Agency Approves Majority of Standards, Will Work with Missouri on Those Remaining

(Kansas City, KS, Aug. 17, 2011) - EPA Region 7 issued a series of decisions today approving the vast majority of the State of Missouri's 2009 Water Quality Standards package, acting on a court-ordered deadline and in accordance with the federal Clean Water Act. Overall, EPA is approving MDNR's proposed designated use changes for 244 Missouri water bodies, and disapproving 23 others. The Agency will continue to work with the state to ensure that rigorous science will be applied on the remaining water bodies to ensure adequate protection of aquatic resources and public health.
[http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Compliance and Enforcement!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press+Releases+-+Compliance+and+Enforcement!OpenView)

MO DESE: Preliminary School Performance Reports Issued

(Jefferson City, MO, Aug. 19, 2011) - State education officials released preliminary performance reports today for Missouri's 522 school districts and 37 charter schools. For more than a decade, the Department of Elementary and Secondary Education has issued Annual Performance Reports (APRs), which provide broad, high-level snapshots of performance. The reports contain five years of statistics for each school district, including data from the past school year. The state is working to adopt new and higher standards that would go into effect in about two years. The public can view the preliminary data for each school district and charter school online by using the Department's new Missouri Comprehensive Data System at <http://mcds.dese.mo.gov/Pages/default.aspx>
<http://dese.mo.gov/news/2011/preliminaryapr.htm>

MO DESE: Lee's Summit Teacher Named 2011-12 Missouri Teacher of the Year

(Jefferson City, MO, Aug. 23, 2011) - A selection committee appointed by the Department of Elementary and Secondary Education chose third grade teacher Kristen Merrell for the annual award She automatically becomes Missouri's nominee for the National Teacher of the Year program. Merrell has taught at Lee's Summit Elementary since 2004 and has served in a variety of leadership roles. She has been a literacy lead teacher, a professional learning communities coach, and a member of the math essential skills and curriculum assessment teams. <http://dese.mo.gov/news/2011/toy.htm>

PBS: Tar Sands Pipeline Plan ("Keystone") Renews Energy vs. Environment Debate.

(Jeffrey Brown, Aug. 29, 2011) - A friendly and safe new source of oil for the U.S. or an environmental disaster waiting to happen? The tar sands of Alberta, in western Canada, are today considered one of the largest oil reserves in the world, a source of crude petroleum known as bitumen. But the extraction of oil there has come with concerns about the environmental impact. And now those concerns have exploded with a plan by the Calgary-based company TransCanada to build a massive pipeline to carry that crude oil deep into the U.S.

http://www.pbs.org/newshour/bb/environment/july-dec11/oilpipeline_08-29.html

EPA: Builder of The Links of Columbia, Mo., to Pay \$430,000 Civil Penalty for Construction Stormwater Violations

(Kansas City, KS, Aug. 31, 2011) - Lindsey Construction Company, Inc., of Fayetteville, Ark., and one of its associated limited partnerships have agreed to pay a \$430,000 civil penalty to the United States to settle a series of construction stormwater violations that occurred during development of The Links of Columbia, a nine-hole golf course and 64-building apartment project in Columbia, Mo. [http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Compliance and Enforcement!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press+Releases+-+Compliance+and+Enforcement!OpenView)

EPA: Washington University in St. Louis, Mo., to Pay Civil Penalty and Replace Windows for Failure to Disclose Lead-Based Paint Hazards

(Kansas City, KS, Aug. 31, 2011) - Washington University of St. Louis, Mo., has agreed to pay a \$2,778 civil penalty to the United States and spend at least \$24,998 to replace old windows in its married student housing units to settle allegations that it failed to disclose the presence of lead-based paint or lead-based paint hazards to tenants prior to the leasing of some of its other housing units.

[http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Compliance and Enforcement!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press+Releases+-+Compliance+and+Enforcement!OpenView)

MO DNR: Beach at Watkins Mill State Park closed due to bacteria levels

(Jefferson City, MO, Aug. 31, 2011) - The swimming beach at Watkins Woolen Mill State Park and Historic Site was closed today after water samples taken Monday showed bacteria levels in excess of the Department of Natural Resources' standard for state park beaches. The beach at Watkins Woolen Mill is scheduled to close Sept. 6, which is the end of the recreational season. Therefore, no additional water samples will be collected from the beach and it will remain closed for the season. All other facilities at the park, with the exception of Fox Hunt Picnic Area, are open and available to visitors. <http://www.dnr.mo.gov/newsrel/data.asp?param=29>

EPA: College Football Fans Compete to Protect the Environment

(Washington D. C., Sept. 1, 2011) - This fall, colleges across the country will compete to see which schools can reduce, reuse, and recycle the most waste as part of the U.S. Environmental Protection Agency's (EPA's) 2011 Game Day Challenge. Registration for the competition is now open, and champions will be crowned this December.



MO FFA Officer Kollen Chapman with President Obama

MO DESE: Missouri FFA Officers Attend Forum Sponsored by the White House

(Jefferson City, MO, Sept. 1, 2011) - Four Missouri FFA officers recently attended the Rural Economic Forum sponsored by the White House. The event was held Aug. 16 at Northeast Iowa Community College in Peosta. The Missouri officers joined counterparts from Illinois, Iowa and Wisconsin, along with two representatives from the National FFA Organization. Missouri representatives included: **Jill Blankenship**, state vice president from Eldon; **Kollen Chapman**, state vice president from Osceola; **Evan Grusenmeyer**, first state vice president from Smithville; and **Samantha Whittaker**, state vice president from Miller. Keith Dietzschold, Missouri FFA Northwest District supervisor and executive secretary, accompanied the student representatives to the event.

<http://dese.mo.gov/news/2011/ffaforum.htm>

EPA: Bannister Federal Complex Plan Represents Significant Step Forward in Resolving Environmental Issues

(Kansas City, KS, Sept. 2, 2011) - A formal permit modification request by the U.S. Department of Energy (DOE) and the General Services Administration (GSA) for the Bannister Federal Complex in Kansas City, Mo., represents a significant step forward in resolving the property's long-term environmental issues under a single, comprehensive plan, officials of EPA Region 7 and the Missouri Department of Natural Resources (MDNR) said today.

[http://yosemite.epa.gov/opa/admpress.nsf/Press Releases - Compliance and Enforcement!OpenView](http://yosemite.epa.gov/opa/admpress.nsf/Press%20Releases%20-%20Compliance%20and%20Enforcement!OpenView)

MO DESE: Six State-Level Finalists Named for Presidential Teaching Award

(Jefferson City, MO, Sept. 2, 2011) - Honor recognizes outstanding math and science teachers nationwide. Six Missouri educators have been selected as state-level finalists for the [2011 Presidential Award for Excellence in Mathematics and Science Teaching](#). The three finalists in the mathematics category are: **Charlene Atkins**, a teacher at Kingsville High School; **Jennifer Baker**, a teacher at Hazelwood West High School; and **Melissa Livengood**, a teacher at Odessa High School. The three finalists in the science category are: **Gina Johnson**, a teacher at Raymore-Peculiar East Middle School; **Christy Straatmann**, a teacher at Valley Park Middle School; and **Robert Becker**, a teacher at Kirkwood High School. (Becker was Missouri's Teacher of the Year for 2010-11).

<http://dese.mo.gov/news/2011/paemst-finalists.htm>

PBS: Obama Drops Proposed Clean Air Rules.

(News Desk, Sept. 2, 2011) - President Obama has reversed course on proposed smog standards, a [victory for business interests](#) that had decried the smog restrictions on the grounds that they should be postponed -- until at least 2013 -- due to the recession. The Environmental Protection Agency had asked that new rules to reduce pollution be imposed on states and businesses to target smog, or ground-level ozone, from cars, industrial plants and other sources. EPA administrator Lisa Jackson had been working to revise a 2008 rule put in effect during the George W. Bush administration.

<http://www.pbs.org/newshour/topic/environment/>

2011 MEEA Officers

President: Mike Kromrey - Springfield
President Elect: Deb Ballin - St. Joseph
Past President: Nancy Snider - St. Louis
Secretary: John Sode - Lebanon
Treasurer: Fran Fry - Niangua

2011 MEEA Board

Karen Armstrong - Kirksville - 2011-2012
Kim Garbs - O'Fallon - 2011-2010
Heather MacCleoud - Jefferson City - 2011-2012
Carol Mahan - Rolla - 2010-2011
Andrea Putnam - Jefferson City - 2010-2011
Sharon Ruhnke - St. Joseph area -2011-2012

Staff and Liaisons

Communications: Jan Weaver - Columbia
DNR Liaison: Debbie Brunner - Jefferson City
MDC Liaison: Kevin Lohraff - Jefferson City

meea Membership Application

New or Renewing Member of NAAEE? Y N

Professional \$15 School \$50

Student/Retiree \$7.50 Organization \$100

Name _____

Affiliation _____

Street/P.O. Box _____

City _____ County _____

State _____ Zip _____

Email _____

Phone (h / w) _____

Date _____

Please include a check or money order made payable to MEEA and return to MEEA P.O. Box 13 Columbia MO 65205-0013

Fall 2011 Contents

President's Column p. 1
Conferences & Workshops p. 2
EE Curricula p.2
EE Jobs p. 3
Membership Report p. 4
MO Draft E Lit Plan p. 5
STOM/MEEA Conference p. 6
PD Corner: EE Guidelines p. 7
Topics for Teaching: What Warming Means for Missouri p. 8
PD Workshops p. 9
Grants and Awards p. 10
Events p. 11
Environmental and EE News p. 12

Our Organizational Members

- ◆ *AbiBow Recycling*
- ◆ *Missouri Recycling*
- ◆ *St. Louis County Health - Recycling*
- ◆ *Watershed Committee of the Ozarks*

Thank you for your support!



MISSOURI ENVIRONMENTAL
EDUCATION ASSOCIATION



P.O. Box 13
Columbia MO 65205-0013

MEEA Vision

An environmentally responsible
citizenry in Missouri

MEEA Mission

Advance environmental education in
Missouri by providing innovative
professional development and
networking opportunities for those
who share our mission

MEEA Value

Connecting people, ideas and

Fall 2011 Issue