



# **My Space... is Outside!**

*Connecting Kids to the  
World Wide Wonder of the Outdoors*

**Outdoor Classroom Symposium  
November 14, 2008  
Rock Eagle 4-H Center  
Eatonton, GA**

**Resources and Handouts**

# Table of Contents

Presenter Contact Information ..... page 1

## **Long Sessions ~ 10:00 am – 11:30 am**

Rain Gardens...Do you need one? Where does it go? ..... page 7

Survival Skills..... page 10

## **Short Sessions ~ 10:00 am – 10:45 am**

Play it Safe When Teaching/Learning Outdoors: Avoiding Air Pollution ..... page 21

Outdoor Classrooms 2.0..... page 23

## **Short Sessions ~ 11:00 am – 11:45 am**

A Field Guide to EE Technologies ..... page 25

## **Short Sessions ~ 1:15 pm – 2:00 pm**

Amphibian Monitoring Workshop..... page 28

Alien Invaders: Exotic Invasion Plant Activity Guide ..... page 33

Hunting for Great Outdoor Learning! Letterboxing, Geocaching, and Questing.... page 34

Eating the Garden: Tips on Preparing Delicious Snacks and Meals with Children..... page 46

Log on to Grant Writing for Your Outdoor Classroom ..... page 66

## **Long Sessions ~ 2:15 pm – 3:30 pm**

Rain Barrels ..... page 108

Solar Cooking ..... page 110

Hypertufa Basics: Getting “Tuf” with Container Gardens ..... page 115

Carnivorous Plant Container Gardens ..... page 120

# Presenter Information

**10:00 am – 11:30 am ~ Long Sessions**

**Alien Invaders – Identification and Management of Invasive Plants**

*Danielle Green, Zoo Atlanta*

[www.zooatlanta.org](http://www.zooatlanta.org)

Contact: [dgreen@zooatlanta.org](mailto:dgreen@zooatlanta.org)

**Environmental Magic**

Jo Adang, Georgia Project WET

Contact: [jo.adang@dnr.state.ga.us](mailto:jo.adang@dnr.state.ga.us)

Monica Kilpatrick, Georgia Project WET

Contact: [monica.kilpatrick@dnr.state.ga.us](mailto:monica.kilpatrick@dnr.state.ga.us)

<http://www.gaprojectwet.org>

**Creating Magic Gardens for Learning and Discovery: Campus Wildlife Sanctuary  
Outdoor Learning Centers**

Jerry Hightower, National Park Service

Contact: [jerry\\_hightower@nps.gov](mailto:jerry_hightower@nps.gov)

[www.nps.gov/chat](http://www.nps.gov/chat)

**Climate Change Lessons: Practical Experiments to Show Climate Change and  
Global Warming Concepts**

John Dalupang, Rock Eagle 4-H Center

[johndalupang.ee@gmail.com](mailto:johndalupang.ee@gmail.com)

**Rain Gardens...Do you need one? Where does it go?**

Diane Minick, Upper Etowah River Alliance

Contact: [dianeminick@msn.com](mailto:dianeminick@msn.com)

[www.stormwaterlandscapes.com](http://www.stormwaterlandscapes.com)

**Survival Skills**

Grant Crumbaugh, Rock Eagle 4-H Center

Contact: [grantc@uga.edu](mailto:grantc@uga.edu)

**Edible School Gardens: Opportunities, Challenges and Recommendations for  
Sustainability**

Erin Croom, Georgia Organics

Contact: [erin@georgiaorganics.org](mailto:erin@georgiaorganics.org)

[www.georgiaorganics.org](http://www.georgiaorganics.org)

**Greening Georgia Schools: Resources for Creating High Performance Schools**

Denise Grimm, Southface Energy Institute  
Contact: [dgrimm@southface.org](mailto:dgrimm@southface.org)  
[www.southface.org](http://www.southface.org)

**Lost Ladybugs and the Goldenrod Challenge: Networking Students and Scientists to Photograph Changes in Biodiversity**

John Pickering, University of Georgia  
Contact: [pick@discoverlife.org](mailto:pick@discoverlife.org)

**10:00 am – 10:45 am ~ Short Sessions**

**Outdoor Classrooms 2.0**

Trecia Neal, Fernbank Science Center  
Contact: [t.neal@fernbank.edu](mailto:t.neal@fernbank.edu)

Kim Bailey, EEinGeorgia.org  
Contact: [kim@eeingeorgia.org](mailto:kim@eeingeorgia.org)  
[www.EEingeorgia.org](http://www.EEingeorgia.org)

**Green Schools and Students**

Cindy Wolfe, Georgia Department of Natural Resources  
Contact: [cindy.wolfe@dnr.state.ga.us](mailto:cindy.wolfe@dnr.state.ga.us)  
[www.greenandhealthy.org](http://www.greenandhealthy.org)

**Play It Safe When Teaching/Learning Outdoors: Avoiding Air Pollution**

Rebecca Watts Hull, Mothers and Others for Clean Air/Georgia Conservancy  
Contact: 404-876-2900 x108

**Urban Watch Atlanta – Helping Students Get Back to Nature While Helping the Environment**

Eli Dickerson, Fernbank Museum of Natural History  
Contact: [eli.dickerson@fernbank.edu](mailto:eli.dickerson@fernbank.edu)  
<http://www.fernbankmuseum.org/education/urbanwatch/>

**11:00 am – 11:45 am ~ Short Sessions**

**A Field Guide to EE Technologies**

Kim Bailey, EEinGeorgia.org  
Contact: [kim@eeingeorgia.org](mailto:kim@eeingeorgia.org)  
[www.eeingeorgia.org](http://www.eeingeorgia.org)

Stacy Smith, EEinGeorgia.org  
Contact: [stacy@eeingeorgia.org](mailto:stacy@eeingeorgia.org)

**Citizen Science Activities in the Classroom**

Tim Keyes, Georgia Department of Natural Resources

Contact: [tim.keyes@dnr.state.ga.us](mailto:tim.keyes@dnr.state.ga.us)  
[www.georgiawildlife.com](http://www.georgiawildlife.com)

**Making the Connection: Using Instructional Technologies to Enhance Environment-based Education**

Kris Irwin, Warnell School of Forestry and Natural Resources, University of Georgia  
Contact: [kirwin@uga.edu](mailto:kirwin@uga.edu)

**Taking the Three R's Outside: Reducing, Reusing, and Recycling in the Outdoor Classroom**

Ginger Criswell, Arcado Elementary PTA Environmental Co-Chair  
Leigh Partington, Arcado Elementary PTA Environmental Co-Chair  
Contact: [environmental@arcadopta.org](mailto:environmental@arcadopta.org)

**1:15 pm – 2:00 pm ~ Short Sessions**

**Amphibian Monitoring Workshop**

Alina Ruiz, Stone Mountain Memorial Association  
Contact: [a.ruiz@stonemountainpark.org](mailto:a.ruiz@stonemountainpark.org)  
<http://stonemountainpark.org>

**Alien Invaders: Exotic Invasion Plant Activity Guide**

Judith Cocus, Elachee Nature Science Center  
Contact: [judith@elachee.org](mailto:judith@elachee.org)  
[www.elachee.org](http://www.elachee.org)

**Hunting for Great outdoor Learning! Letterboxing, Geo-caching, and Questing**

Claire Waggenspack Hayes, Dunwoody Nature Center  
Contact: [claire@dunwoodynature.org](mailto:claire@dunwoodynature.org)  
[www.dunwoodynature.org](http://www.dunwoodynature.org)

**Eating the Garden: Tips on Preparing Delicious Snacks and Meals with Children**

Seth Freedman, Mendez Foundation's Seeds of Nutrition  
Contact: [sfreedman@mendezfoundation.org](mailto:sfreedman@mendezfoundation.org)  
[www.mendezfoundation.org](http://www.mendezfoundation.org)

Barbara Petit, Georgia Organics

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[www.georgiaorganics.org](http://www.georgiaorganics.org)

**Log on to Grant Writing for your Outdoor Classroom**

Sarah Visser, Keep Georgia Beautiful  
Contact: [svisser@dca.state.ga.us](mailto:svisser@dca.state.ga.us)  
[www.keepgeorgiabeautiful.org](http://www.keepgeorgiabeautiful.org)

**No Child Left Inside: Outdoor Activities Which Help Reinforce GPS Standards**

Patti Cook, South Paulding High School  
Contact: [pcook@paulding.k12.ga.us](mailto:pcook@paulding.k12.ga.us)

### **Intro to Flying Wild and Bird Education Initiatives in Georgia**

Mary Terry, State Coordinator for Project WILD

Contact: [mary.terry@dnr.state.ga.us](mailto:mary.terry@dnr.state.ga.us)

[www.georgiawildlife.com](http://www.georgiawildlife.com)

Linda May, Georgia Department of Natural Resources

Contact: [linda.may@dnr.state.ga.us](mailto:linda.may@dnr.state.ga.us)

[www.georgiawildlife.com](http://www.georgiawildlife.com)

Tim Keyes, Georgia Department of Natural Resources

Contact: [tim.keyes@dnr.state.ga.us](mailto:tim.keyes@dnr.state.ga.us)

[www.georgiawildlife.com](http://www.georgiawildlife.com)

### **Drought in Georgia**

Michelle McClendon, University of Georgia Cooperative Extension, Putman Co.

Contact: [mmcclend@uga.edu](mailto:mmcclend@uga.edu)

## **2:15 pm – 3:30 pm ~ Long Sessions**

### **Rain Barrels**

Jennifer McCoy, Cobb County Water System

Contact: [jennifer.mccoy@cobbcounty.org](mailto:jennifer.mccoy@cobbcounty.org)

### **Square Foot Gardening in the School Setting**

Cheryl Carson, King Springs Elementary School PTA

Contact: [cheryl.carson@charter.net](mailto:cheryl.carson@charter.net)

### **Solar Cooking**

Cindy Wolfe, Georgia Department of Natural Resources

Contact: [cindy.wolfe@dnr.state.ga.us](mailto:cindy.wolfe@dnr.state.ga.us)

### **Hypertufa Basics: Getting “Tuf” with Container Gardening**

Celia Steigerwald, Casa Montessori

Karen Garland, Georgia Conservancy

Contact: [kgarland@gaconservancy.org](mailto:kgarland@gaconservancy.org)

[www.georgiaconservancy.org](http://www.georgiaconservancy.org)

### **Starting a Class Herbarium**

David Hedgepeth, Valdosta State University

[dhedgepe@valdosta.edu](mailto:dhedgepe@valdosta.edu)

### **Carnivorous Plant Container Gardens**

Heather Fleming, The State Botanical Garden of Georgia

Contact: [hfleming@uga.edu](mailto:h Fleming@uga.edu)

<http://www.uga.edu/botgarden/>

## **Saturday Workshops**

### **Our Shared Forests: Connecting Local Education to Global Conservation**

Anne Shenk, The State Botanical Garden of Georgia

Contact: [ashenk@uga.edu](mailto:ashenk@uga.edu)

<http://www.uga.edu/botgarden/>

### **Georgia's Native Seasons**

Karen Garland, Georgia Conservancy

Contact: [kgarland@gaconservancy.org](mailto:kgarland@gaconservancy.org)

[www.georgiaconservancy.org](http://www.georgiaconservancy.org)

## **Long Sessions ~ 10:00 am – 11:30 am**

Resources submitted by:

Rain Gardens...Do you need one? Where does it go?  
Diane Minick

Survival Skills  
Grant Crumbaugh



# Drought-tolerant and Rain Garden Plant List (Georgia Natives)

<b>Common Name</b>	<b>Scientific Name</b>	<b>Conditions</b>
<b>Trees</b>		
Green Ash	<i>Fraxinus pennsylvanica</i>	Full Sun (FS)
Black Gum	<i>Nyssa sylvatica</i>	Part Shade (PSh), FS, <b><u>DT</u></b>
Ironwood	<i>Carpinus caroliniana</i>	Full Shade (FSh)
Sweet Bay Magnolia	<i>Magnolia virginiana</i>	<i>PSh, FSh</i>
Swamp Chestnut Oak	<i>Quercus michauxii</i>	<i>PSh, PS (Part Sun)</i>
Silverbell	<i>Halesia Carolina</i>	<i>FS, PSh</i>
Yaupon Holly	<i>Ilex vomitoria</i>	<i>FS, FSh, PS, PSh, <b><u>DT</u></b></i>
River Birch	<i>Betula nigra</i>	<i>FS, FSh, PS, PSh, <b><u>DT</u></b></i>
Possum haw	<i>Ilex decidua</i>	<i>PS, PSh, <b><u>DT (drought tolerant)</u></b></i>
Bald Cypress	<i>Taxodium distichum</i>	<i>FS, FSh, PS, PSh</i>
Willow Oak	<i>Quercus phellos</i>	<i>FS, PS, PSh, <b><u>DT</u></b></i>
<b>Shrubs</b>		
Beautyberry	<i>Callicarpa Americana</i>	<i>PSh, PS, FS, <b><u>DT</u></b></i>
Virginia Sweetspire	<i>Itea virginica</i>	<i>PS, PSh</i>
Spicebush	<i>Lindera benzoin</i>	<i>PSh, PS, <b><u>DT</u></b></i>
St. John's Wort	<i>Hypericum frondosum</i>	<i>FS, PS, <b><u>DT</u></b></i>
Sweetshrub	<i>Calycanthus floridus</i>	<i>FSh, FS, <b><u>DT</u></b></i>
Sweet Pepperbush	<i>Clethra alnifolia Hummingbird</i>	<i>PS, PSh, <b><u>DT</u></b></i>
Red Twig Dogwood	<i>Cornus sericea</i>	<i>PS, PSh, FS</i>
Arrowwood	<i>Viburnum dentatum, &amp; nudum 'Blue Muffin'</i>	<i>FS, PS, PSh, <b><u>DT</u></b></i>
<b>Herbaceous</b>		
New England Aster	<i>Aster novea-angliae</i>	<i>FS, <b><u>DT</u></b></i>
Blazing Star	<i>Liatrus spicata</i>	<i>FS</i>
Cardinal Flower	<i>Lobelia cardinalis</i>	<i>FS, FSh, PS, PSh,</i>
Swamp Hibiscus	<i>Hibiscus coccinea</i>	<i>FS, PS, <b><u>DT</u></b></i>
Blue Iris	<i>Iris virginica</i>	<i>FS, <b><u>DT</u></b></i>
Copper Iris	<i>Iris fulva</i>	<i>FS, <b><u>DT</u></b></i>
Joe Pye Weed	<i>Eupatorium fistulosum</i>	<i>FS, <b><u>DT</u></b></i>
Swamp Sunflower	<i>Helianthus angustifolius L.</i>	<i>FS, <b><u>DT</u></b></i>
Wild Geranium	<i>Geranium maculatum</i>	<i>PS, PSh, <b><u>DT</u></b></i>
Turtlehead	<i>Chelone glabra/lyoni</i>	<i>FS, PSh, PS</i>
Spiderwort	<i>Tradescantia virginiana</i>	<i>FS, PS, PSh, FSh, <b><u>DT</u></b></i>
Boltonia	<i>Boltonia asteroides</i>	<i>FS, <b><u>DT</u></b></i>
Phlox, woodland	<i>Phlox divaricata</i>	<i>FSh, PSh, PS, <b><u>DT</u></b></i>
Fire Pink	<i>Silene virginica</i>	<i>FSh, PSh, PS, <b><u>DT</u></b></i>
Foamflower	<i>Tiarella cordifolia</i>	<i>FSh, PSh, PS, FS</i>
Green and Gold	<i>Chrisogonum virginianum</i>	<i>PS, PSh, <b><u>DT</u></b></i>
<b>Ferns</b>		
Cinnamon fern	<i>Osmunda cinnamomea</i>	<i>FSh, PSh, PS, FS, <b><u>DT</u></b></i>
Royal fern	<i>Osmunda regalis</i>	<i>FSh, PSh, PS, FS</i>
Ostrich fern	<i>Matteucia struthiopteris</i>	<i>FSh, PSh, PS, <b><u>DT</u></b></i>
Southern Maidenhair	<i>Adiantum capillus-veneris</i>	<i>FSh, PSh, <b><u>DT</u></b></i>
Christmas fern	<i>Polystichum acrostichoides</i>	<i>FSh, PSh, PS, <b><u>DT</u></b></i>
Log fern	<i>Dryopteris celsa</i>	<i>FS, PS, PSh, <b><u>DT</u></b></i>
Hay-scented fern	<i>Dennstaedtia punctilobula</i>	<i>FS, PS, PSh</i>
Shield fern	<i>Dryopteris carthusiana (spinulosa)</i>	<i>PSh, Sh</i>
<b>Grasses</b>		
River Oats	<i>Chasmanthium latifolium</i>	<i>FS, PS, <b><u>DT</u></b></i>
Pink Muhly Grass	<i>Muhlenbergia capillaris</i>	<i>FS, PS, <b><u>DT</u></b></i>
Switch Grass	<i>Panicum virgatum</i>	<i>FS, PSh, <b><u>DT</u></b></i>
Silver Plume Grass	<i>Saccharum alopecuroidum</i>	<i>PS, PSh, <b><u>DT</u></b></i>
Indian Grass	<i>Sorghastrum nutans</i>	<i>FS, <b><u>DT</u></b></i>
Purpletop	<i>Tridens flavus</i>	<i>FS, PS, <b><u>DT</u></b></i>

# *Favorite Books, Suppliers & Web Sites*

## *Books*

1. Gardening with Native Plants of the South by Sally Wasowski
2. The Southern Gardener's Book of Lists by Lois Trigg Chaplin
3. The Southern Living Garden Book
4. Native Perennials for the Southeast by Peter Loewer
5. A Georgia Native Plant Guide by Tina M. Samuels

## Suppliers

1. Fern Ridge Farms, 395 Old Vandiver Rd., Canton, Ga. 30114; Eleanor Craig, owner; 770-479-6996, [www.fernridgefarms.com](http://www.fernridgefarms.com)
2. Arthur A. "Buck" Jones & Associates, Inc., 7470 Hickory Flat Highway, Woodstock, Ga. 30188; 770-345-5506; [www.buckjones.com](http://www.buckjones.com)
3. Perennial Grace Nursery, Inc., 14395 Birmingham Hwy., Alpharetta, Ga. 30004; 770-569-5448; [www.pgnic.com](http://www.pgnic.com)
4. Autumn Hill Nursery, 4256 Earney Rd., Woodstock, Ga. 30188; 770-442-3901; Location #2: 100 Pea Ridge Rd., Canton, Ga. 30114; 770-345-5252; [www.autumnhillnursery.com](http://www.autumnhillnursery.com)
5. Riverstone Outdoors Landscape Supply Company, 846 Old Ballground Highway, Canton, Ga. 30114; 678-493-9655; [www.riverstoneoutdoorsonline.com](http://www.riverstoneoutdoorsonline.com)
6. Cloud Supply, 450 Marietta Rd., Canton, Ga. 30114; 770-479-0929

## Web Sites

1. [www.raingardens.org](http://www.raingardens.org)
2. [www.stormwaterlandscapes.com](http://www.stormwaterlandscapes.com) (Stormwater Landscapes, Diane Minick)
3. <http://dnr.wi.gov/org/water/wm/nps/rg/rgmanual.pdf> (homeowners how-to manual)
4. [www.dof.state.va.us/rfb/riparianrain\\_gardens.htm](http://www.dof.state.va.us/rfb/riparianrain_gardens.htm)
5. <http://natsci.edgewood.edu/wingra/management/raingardens/default.htm>
6. <http://www.raingardennetwork.com/>
7. [www.gardengatemagazine.com/tips/40tip11.html](http://www.gardengatemagazine.com/tips/40tip11.html) (rain barrel)
8. [www.geocities.com/rainsystem/howto.html](http://www.geocities.com/rainsystem/howto.html) (rain barrel)
9. <http://www.mmsd.com/environment/water.cfm>
10. [www.gnps.org](http://www.gnps.org) (Georgia Native Plant Society)

***Turn An Ugly Problem Into A Beautiful Solution!***

***We'll Solve Your Stormwater Landscape Problems!***

## **Article I. Survival**

### ***Section 1.01 Introduction***

- (a) My camping**
- (b) My time outside**
- (c) Bathrooms**

### ***Section 1.02 Lost Proofing***

#### **(a) What type of trip is it?**

- (I) Wilderness trekking**
- (II) Road Trip**
- (III) Boat trip**
- (IV) Day or over night**
- (V) Remote or urban**

#### **(b) Give trip plan to reliable friends at home**

##### **(I) Include:**

- 1) Who is going***
- 2) Location***
- 3) Times***
- 4) Type of vehicle***

**(c) Give same plan to local authorities in area of trip**

**(d) How should we prepare?**

**(I) Companions should be of comparable mental attitude, physical condition and ability as you are**

**(II) Equipment**

*1) Wear/bring proper clothing for the terrain and weather. Wear appropriate footwear,*

*2) Essentials to be kept on your person*

**a) Morale builder**

**i) Photo of loved ones**

**ii) Stick of gum**

**b) Good rain coat**

**c) Basic First Aid Kit**

**d) Pocket knife**

**e) Water purification**

**f) A candle**

**g) Paper and pencil**

**h) Flashlight**

**i) A map and compass**

**j) High energy food**

**k) 50' of parachute cord (can be split and inner fibers used for fishing line)**

**l) Some duct tape rolled around pencil**

*3) Essentials to be kept in your vehicle*

**a) Vehicle well maintained**

**b) Substantial First Aid Kit**

**c) Spare Tire (in good shape)**

- d) **Jumper cables**
- e) **Fire extinguisher**
- f) **Tow chain/s**
- g) **Tire chains**
- h) **Jack platform (2x10)**
- i) **Tool Kit (knowledge to use it)**
- j) **Snow shovel**
- k) **Blankets**
- l) **Road maps**
- m) **Extra batteries (for phone, flashlight, GPS, Radio)**
- n) **Emergency money**

### **(III) Supplies**

*1) Bring extra!*

### **(IV) Signal devices (Be aware of range/coverage area!)**

- a) **Cell phone**
- b) **Radio**
- c) **GPS**
- d) **Signal mirror**
- e) **Pencil and paper**
- f) **Personal location beacon**
- g) **Whistle**
- h) **Flares**
- i) **Dye markers (water)**
- j) **Flags**
- k) **Extra paddle/Fuel**

**(V) Knowledge**

*1) Of area*

- a) Culture

*2) Of equipment*

- a) Map and compass will not help if you do not know how to use them!

*3) First Aid*

**(e) Notice land marks**

**(I) Glance backwards now and again**

- 1) This includes driving, be aware of the exit numbers and street names to get back out*

**(II) Uphill or down**

**(III) Wet or dry**

- 1) Are there tracks I can follow back?*

**(IV) Foliage**

- 1) Heavy or light*

- 2) Types of trees (Hickory Grove)*

### **Section 1.03     *Gather and Go!***

**(a) I know where we are going so think of me as a guide**

**(I) Going to travel less than 1.5 hours (less than 1 mile total)**

**(b) Keep track of land marks**

### **Section 1.04     *Lose Them***

**(a) Gather together (discuss panic)**

**(b) Go through “STOP” step by step**

**(I) S = stop**

*1) Sit, calm down,*

*2) Rule of three*

**a) 3 seconds without your head**

**b) 3 minutes without air**

**c) 3 hours without shelter from elements (depending on circumstances)**

**d) 3 days without water**

**e) 3 weeks without food**

**(II) T = think**

*1) How did you get into this*

*2) Where did you come from*

*3) What do you have with you*

**(III) = observe**

*1) Are you hurt*

*2) Can you identify land marks around you*

*3) How is the weather looking*



**(IV) P = plan**

**1) *Stay or Go***

- a) Decorate a tree if staying

**2) *How would different trips change the plan***

**Section 1.05     *Implement Plan (we have to spend the night)***

- (a) Now we have lost our guide, he was last seen running really far ahead of the group and we have been walking for about 2 hours**

**(I) How far could we cover in 2 hours?**

- 1) *The average hiker can easily do 2 miles an hour with a full pack, on a cleared trail***
- 2) *It is not unusual for a hard core walker to double that!***

**Section 1.06 What are our needs (I have listed some typical needs, specific needs and their priority will change with each situation)**

**(a) Positive mental attitude**

**(I) Survival is often said to be 10% material, 10% skill, and 80% mental attitude.**

**(b) Shelter (Show them mine)**

**(I) Number one killer is hypothermia**

**(II) No need to make it big**

**(III) Leaves/needles will be the key (think of a squirrel nest)**

**(IV) Face the door away from the dominant winds (wind is from the west in our case so our door is facing east)**

**(V) Let it take away some of the boredom, have pride in it!**

**(VI) Try to keep dry, wet clothing loses heat 240 times faster than dry clothing**

**(VII) Fire (build it)**

**1) *Tender, Kindling, Fuel (small to big)***

**2) *Have materials ready before you light it***

**3) *Be aware of wind direction***

**4) *Don't burn down your shelter especially with you in it!***

**5) *Wait till we begin to gather material and then do Pocket activity***

**a) Lay out all our belongings and divide them into two piles. Useful and not useful**

**b) What would be nice to have?**

**c) What do I have that is not with me now?**

**d) What can I do with what I have**

**(c) Water**

**(I) Try not to lose**

- 1) *Rather than trying too hard to find it conserve it?*

**(II) Collection**

1) *Rain water*

- a) **Line holes with plastic**

2) *Hollow stumps*

3) *Rock depressions*

4) *Squeezed out of succulent plants*

5) *Strain out of mud with a rag*

6) *Collect dew with rag and wring it into container*

7) *Dump or scrape off leaves on forest floor*

**(III) Purification**

1) *Boil (at least 10 min)*

2) *5 drops of iodine to 2 pints of water*

3) *2 drops of bleach to 1 quart*

4) *Commercial water purification tablets*

**(d) Food (Not covered in this course)**

**(e) Discuss plan changes**

**(I) Hurt**

**(II) Darkness**

**(III) Cold**

**(IV) Hot**

**(V) Extended time or distance**

***Section 1.07 Trek Home***

**(a) Only leave if you have a good reason**

**(b) Review statistics on those that go vrs stay**

**(c) Lead me back the exact route we came!**

***1) On our way we:***

**a) Crossed over 3 trails**

**b) Crossed at least 1 creek or stream**

**c) Crossed within site of at least one bridge if not three!**

**d) Crossed one road**

**e) Cottage, what number was it? (# 54)**

**f) Big Gulley**

**g) Big hardwood root ball**

**(II) Swap the leader every so often**

**(III) Follow exact path**

**(IV) If you get too far off I will stop you!**

## **Article II. Resources**

**Section 2.01     Outdoor Living-Problems, Solutions-Guidelines  
Tacoma Mountain Rescue Unit P.O. Box 696, Tacoma, WA 98401**

**Section 2.02     *How to Stay Alive in the Woods, Bradford  
Angier***

**Section 2.03     *Mountaineering First Aid, Dick Mitchell***

**Section 2.04     Outdoor Safety & Survival, Paul H. Risk, Pub:  
*John Wiley & Son, Inc. 1979***

**Section 2.05     Survival, Department of the Army, Field Manual  
*1998***

**Section 2.06     Boy Scout Field Book, Boy Scouts of America,  
*Workman Publishers, NY, Current Edition***

**Section 2.07     SAS Survival Guide, John Wiseman, Pub:  
*Harper Collins***

**Section 2.08     *Tom Brown's Field Guide To Living with the  
Earth, Tom Brown, Pub: The Berkley Publishing Group***

## **Short Sessions ~ 10:00 am – 10:45 am**

Resources submitted by:

Play It Safe When Teaching/Learning Outdoors: Avoiding Air Pollution  
Rebecca Watts Hull

Outdoor Classrooms 2.0  
Kim Bailey and Trecia Neal

# Guidance for Georgia Schools

## *Outdoor Air Quality & Physical Activity*



### Introduction

Long-term exposure to air pollution can lead to serious health problems in all people and short-term exposure can lead to asthma attacks and heart trouble in vulnerable people. The health risk of air pollution rises as outdoor pollutant concentrations rise. Children are especially vulnerable because their lungs are still developing, they take in more air in relation to body weight, and they tend to spend more time being active outdoors than adults.

*This guidance document is intended to help school systems develop action plans for appropriate changes in outdoor activity when air pollution reaches unhealthy levels.*



### Determining Outdoor Air Quality

A measure called the Air Quality Index (AQI) rates daily air quality on a scale from 0 (the cleanest) to 500 (the most polluted). Health warnings are set according to medical research studies that link health risks with different amounts of airborne pollutants. Recent studies have led to new, stricter standards for ground-level ozone that took effect in Georgia in May 2008.

The Georgia Environmental Protection Division issues a Smog Alert whenever the AQI is predicted to exceed 100. Atlanta area school systems can register to receive emailed alerts through The Clean Air Campaign Web site ([www.CleanAirCampaign.com](http://www.CleanAirCampaign.com)). Alerts for the Macon area are available through the Middle Georgia Clean Cities Coalition from: [Charise.Stephens@macon.ga.us](mailto:Charise.Stephens@macon.ga.us). The forecasts are also available through the Georgia Environmental Protection Division's Air Quality Hotline (404.362.4909). These forecasts predict which pollutants are likely to be high the following day, allowing school Administrative staff to plan any needed changes in outdoor activities.

### When and Where Is Air Pollution a Problem in Georgia?

The two outdoor air pollutants of greatest concern in Georgia are ground-level ozone and fine particulate matter (PM<sub>2.5</sub>, also called particle pollution). These pollutants together are often referred to as smog. The twenty-county metro Atlanta area and the Macon area violate federal air quality standards. With a stronger ozone standard now in place, Athens, Augusta, Columbus and part of northwest Georgia are also violating the federal standard for that pollutant.

Although air quality is a year-round concern, most smog occurs during the warm months of late spring and summer, including May, August and September when children are in school. In addition, some athletic teams and marching bands practice outdoors during the peak of smog season. As a result, school systems should be prepared to adjust outdoor activities to protect student health on days when ozone, fine particulates or both exceed federal standards.



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## Recommended Changes in Outdoor Activities

AQI	Health Concern	Recommendation
GREEN 0-50	The air is considered healthy for everyone.	Outdoor activities are recommended for all students.
YELLOW 51-100	The air is unhealthy mainly for extremely sensitive children and adults.	Outdoor activities are recommended for most students except those known to respond to air pollution at this level.*
ORANGE 101-150	The air is unhealthy for sensitive individuals, including all children under the age of 18, mature adults over the age of 55, and those with respiratory and cardiac conditions.	Outdoor exertion for all children and for sensitive adults should be <u>limited</u> in duration and intensity. When possible, all outdoor activity should be moved to times of day when the pollutant of concern is lowest.**
RED 151-200	The air is unhealthy for everyone.	Outdoor activities should be <u>avoided</u> for children and adults. Depending on the pollutant that is high, there may be some times during the day that are safer for outdoor activity (see yellow box, below).
PURPLE 201-400	The air is unhealthy or even hazardous for everyone.	Outdoor activities should be avoided for all children and adults, throughout the day and evening.

*\*School staff should watch children carefully for signs of distress to identify students who are more sensitive, as well as ensure immediate access to medications for students with asthma.*

*\*\*See attached implementation document for additional suggestions regarding specific ways to reduce exposure, such as doing indoor weight training instead of outdoor endurance training on smog alert days.*

**Ozone and particle pollution peak at different times of day.** The following guidelines are designed to help school officials decide how to adjust the time of day for outdoor activities according to the pollutant of concern. Sometimes predictions are higher than actual measured concentrations. To check which (or both) pollutants are high *at a specific time* (raw data from the previous hour), go to:

[www.georgiaair.org/tmp/today/amp\\_O3.html](http://www.georgiaair.org/tmp/today/amp_O3.html) for ozone, and  
[www.georgiaair.org/tmp/today/amp\\_PM25.html](http://www.georgiaair.org/tmp/today/amp_PM25.html) for particle pollution (PM<sub>2.5</sub>)

- Ozone concentrations are generally highest between 2:00 p.m. and 7:00 p.m. Move outdoor activities to the morning, and limit outdoor time after 2:00 p.m. as much as possible.
- Particle pollution concentrations often peak during morning and evening rush hour but can still be quite high in the middle of the day due to photochemical particle formation. Outdoor time should be limited throughout the day and evening unless the Georgia Air site indicates actual levels are not at the unsafe levels that were predicted.
- If both ozone and particle pollution concentrations are high, outdoor activity should be limited throughout the day and evening unless the Georgia Air site indicates actual levels are not at the unsafe levels that were predicted.



## OUTDOOR CLASSROOMS 2.0

**Presented by  
Trecia Neal, Fernbank Science Center and Kim Bailey, EEinGeorgia.org  
for Monarchs Across Georgia**

### **Journey North**

Journey North engages students in a global study of wildlife migration and seasonal change. K-12 students share their own field observations with classmates across North America. They track the coming of spring through the migration patterns of monarch butterflies, robins, hummingbirds, whooping cranes, gray whales, bald eagles— and other birds and mammals; the budding of plants; changing sunlight; and other natural events. Find migration maps, pictures, standards-based lesson plans, activities and information to help students make local observations and fit them into a global context. Widely considered a best-practices model for education, Journey North is the nation's premiere "citizen science" project for children. The general public is also welcome to participate.

Learn More:

[www.learner.org/jnorth/](http://www.learner.org/jnorth/)  
[www.learner.org/jnorth/monarch/index.html](http://www.learner.org/jnorth/monarch/index.html)

### **Google Earth**

Google Earth, Google's satellite imagery-based mapping product puts the whole world on a student's computer. It enables users to "fly" from space to street level to find geographic information and explore places around the world. Like a video game and a search engine rolled into one, Earth is basically a 3D model of the entire planet that lets you grab, spin and zoom down into any place on Earth. From literature to environmental science, Google Earth can help you bring a world of information alive for your students.

Learn More:

[www.google.com/educators/geo.html](http://www.google.com/educators/geo.html)  
[www.morethanmonarchs.org/common/Monarch\\_Area\\_Virtual\\_Tour\\_Instructions.pdf](http://www.morethanmonarchs.org/common/Monarch_Area_Virtual_Tour_Instructions.pdf)  
<http://gelessons.com/lessons/>

**Short Sessions ~ 11:00 am – 11:45 am**

Resources submitted by:

A Field Guide to EE Technologies  
Kim Bailey and Stacy Smith

## *A FIELD GUIDE TO EE TECHNOLOGIES*

**Presented by Kim Bailey and Stacy Smith, *EEinGeorgia.org*  
2008 Outdoor Classroom Symposium**

### **1. Blog** (*Bloggus ventus*)

Short for the term Weblog, most blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, Web pages, or other media related to its topic.

Example: <http://songs-for-ee.blogspot.com/>

### **2. Google Earth** (*Terra viewus maxiums*)

Google Earth is a virtual globe program that maps the earth by the superimposition of images obtained from satellite imagery, aerial photography and GIS 3D globe.

Example:

[www.morethanmonarchs.org/common/Monarch\\_Area\\_Virtual\\_Tour\\_Instructions.pdf](http://www.morethanmonarchs.org/common/Monarch_Area_Virtual_Tour_Instructions.pdf)

### **3. Photo Sharing** (*Gimmeyoura picturus*)

Photo sharing is publishing or transferring a user's digital photos online, thus enabling the user to share photos with others (publicly or privately). This functionality is provided through both Web sites and applications that facilitate the upload and display of images. Some sites, such as Flickr allow you to assign a "tag" to photos, which is like a keyword or category label. Tags help you find photos which have something in common.

Example: [www.flickr.com/photos/32753576@N02/sets/72157610110763822/](http://www.flickr.com/photos/32753576@N02/sets/72157610110763822/)

### **4. Podcast** (*Audiocastia internetus*)

A podcast is a collection of digital media files that are distributed over the Internet for playback on portable media players and personal computers. The term can refer either to the content itself or to the method by which it is syndicated. The host or author of a podcast is often called a podcaster.

Example: [www.acc-recycle.org/trashtalk.htm](http://www.acc-recycle.org/trashtalk.htm)

### **5. RSS** (*Syndicus simplicita*)

Really Simple Syndication (RSS) is an easy way for Web sites to share headlines and stories from other sites. Web surfers can use sophisticated news readers to surf these headlines using RSS aggregators or news readers. The RSS icon first gained widespread use in 2005/2006.

Example: [www.eenorthcarolina.org/rssfeeds.html](http://www.eenorthcarolina.org/rssfeeds.html)

### **6. Social Bookmarking** (*Websitus rememberis*)

This a method for Internet users to tag, store, organize, search, and manage bookmarks of Web pages. By storing bookmarks on the Web, instead of inside your browser, you can get to them from anywhere, share them publicly, and find other people's bookmark

collections. Founded in late 2003, del.icio.us (pronounced "delicious") pioneered tagging and coined the term social bookmarking.

Example: <http://delicious.com/tag/school%20garden%20kids>

### **7. Social Networking Site** (*Socialus connectus*)

A social network service focuses on building online social networks for communities of people who share interests and activities. Most Web-based services provide a collection of various ways for users to interact including chat, messaging, email, video, voice chat, file share, blogs, and forums.

Example: [www.myspace.com/re3org](http://www.myspace.com/re3org)

### **8. Video Broadcast** (*Broadcastia internetus*)

Video sharing websites are websites where users can upload, view and share video clips. Educational videos allow teachers to find videos on specific topics they are covering in the classroom.

Example: [www.teachertube.com/view\\_video.php?viewkey=0df92f391f66b1e51903](http://www.teachertube.com/view_video.php?viewkey=0df92f391f66b1e51903)

### **9. Web Portal** (*Webbus portalis*)

Web portals often function as a point of access to information on the World Wide Web and as a pathway to other content. Portals present information from diverse sources in an unified way. They often serve in the role of a "clearinghouse" and include ways to search content from multiple partners or sources.

Example: [www.eeingeorgia.org](http://www.eeingeorgia.org)

### **10. Wiki** (*Wikkius quickiius*)

A wiki is software that allows users to easily create, edit, and link pages together. Wikis are often used to create collaborative Web sites and to power community Web sites. These wiki Web sites are often also referred to as wikis. Wikis are generally designed with the philosophy of making it easy to correct mistakes, rather than making it difficult to make them. Almost every wiki will have a "Recent Changes" page.

Example: <http://gatorgarden.pbwiki.com/>