How much difference does shade really make?

You've probably heard it quite often:

- Shade will make your home cooler.
- Shade will make your air conditioner work more easily.
- It's cooler in the shade.
- Shade is good.
- Shade, shade, shade....!

You've probably believed some of it. Sure, it's cooler in the shade. After all, that's why we stand under a tree when it's hot outside. But how much have you believed the other claims? In other words, how much difference does shade really make?

At the Earth Day event in Wilmington this past April, a quiet experiment was being conducted. It wasn't anything fancy; just four half-pint bottles of water on a table: two clear, two spray-painted black. They were divided into two sets with one clear bottle and one black bottle per set. One set was in the shade, the other was in the sun. The two sets of bottles were on the same table and only about a foot apart from each other, but it turns out that that can be a very big difference.

Aquarium thermometers were attached to the outside of each bottle and the temperatures were recorded periodically from 11:25 am until 5:15 pm. The resulting data were graphed (Fig. 1).

For the bottles in the shade, it didn't matter if the bottle was clear or black. They changed temperature at the same rate and only by 7°F during the course of the experiment. The bottles in the sun were much different from those in the shade and from each other. The clear bottle reached a maximum temperature of 88°F, the black bottle reached 92°F. Both bottles in the sun had a temperature drop when the sun went behind a cloud.

Curious? Try it yourself and see! And yes, a 15°F temperature difference will have an impact on: how hard your heat pump has to work, the temperature of the air that it is working with, the temperature of your yard, the amount of watering you may need to do in your yard, the temperature of rain runoff water entering local waterways, etc.

Newsletter On-line & Website Activities

This newsletter is available on-line as a PDF file. It can be accessed at:

Several activities (word searches, quizzes, etc.) are also available on-line at:
http://www.ces.ncsu.edu/onslow/staff/drashash/envindex.php

Environment-related Word Jumbles:

- snoceveer: __ __ __ __ __ __
- leeyrcc: __ __ __ __ __ __
- teaws: __ __ __ __
- Can't live without it: __ __ __ __
**Poster & T-shirt Design Contest**

NC Big Sweep Design Contest:  
Contest Deadline is **October 15, 2007**

The artist with the best design will receive $100. The winning design may be used on T-shirts and other printed materials advertising the 2008 North Carolina Big Sweep annual statewide cleanup. The winning entry will be announced November 1, 2007.

**CONTEST GUIDELINES:** All students in grades K-12 are eligible. Use only unlined 8½ x 11 white paper. Place student name, age, school name, address and phone number on the back of the artwork. Do not use pencil! Use no more than three (3) colors on the design. The design must be the student’s own work; computer generated designs must not be copyrighted. Only one submission per person. Mail entries to:

North Carolina Big Sweep  
P.O. Box 126  
Zebulon, NC 27597-0126

All entries become property of North Carolina Big Sweep and will not be returned. Designs will be judged on:

- **Message** 25%  
- **Educational Value** 25%  
- **Originality** 25%  
- **Attractiveness** 25%

---

**Hazardous Household Waste Events**

Brunswick County HHW Collection Day:  
**Saturday, September 15, 2007**

Hours: 9:00 am - 2:00 pm  
Location: Wal-Mart Parking Lot  
Address: 1675 N Howe Street, Southport

Co-Sponsors:  
Mrs. Jennifer Whitley  
HHW/Recycling Coordinator  
Brunswick County Solid Waste Department (910) 253-2524

Mr. David Barkley, Pesticide Coordinator  
Brunswick County Cooperative Extension (910) 253-2610

J. Derrick Bell, Program Manager  
NCDA & CS  
Pesticide Disposal Assistance Program (PDAP) (919) 733-3556 ext 327

New Hanover County HHW Collection Day:  
**Saturday, November 3, 2007**

Location: Cinema lot at UNCW  
Hours: TBA

Both of these are good opportunities to properly dispose of those “odds & ends” hanging around the house or garage:

- solvents, fuels, caustics, batteries, paint, mercury (thermostats, etc.), pesticides, fertilizer, antifreeze, tires and other items.

---

**Compact Fluorescent Bulbs**

The Energy Star website for compact fluorescent lamps (CFLs) states that “if every American home replaced just one light bulb with an ENERGY STAR qualified bulb, we would save enough energy to light more than 3 million homes for a year, more than $600 million in annual energy costs, and prevent greenhouse gases equivalent to the emissions of more than 800,000 cars.” CFLs come in a range of styles and wattages, so there is likely a good choice for your needs. The following table indicates how to choose the proper brightness:

---

### LIGHT OUTPUT EQUIVALENCY

To determine which ENERGY STAR qualified light bulbs will provide the same amount of light as your current incandescent light bulbs, consult the following chart:

<table>
<thead>
<tr>
<th>Incandescent Light Bulb</th>
<th>ENERGY STAR Light Output</th>
<th>Common Energy Star Light Bulb</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>450</td>
<td>9-13</td>
</tr>
<tr>
<td>60</td>
<td>800</td>
<td>13-15</td>
</tr>
<tr>
<td>75</td>
<td>1,100</td>
<td>18-25</td>
</tr>
<tr>
<td>100</td>
<td>1,600</td>
<td>23-30</td>
</tr>
<tr>
<td>150</td>
<td>2,600</td>
<td>30-52</td>
</tr>
</tbody>
</table>

Roughly 20% of an average home’s electric bill is spent for lighting, so replacing incandescent bulbs with CFLs can have a significant impact on your bill. The other major power use is for heating and cooling. CFLs produce nearly 75% less heat than incandescent bulbs, which can help reduce energy costs for home cooling.

CFLs do contain a small amount of mercury. It is hoped that new manufacturing processes will reduce this amount of mercury even more by the end of 2007. In the event that a CFL breaks, EPA has established recommendations for clean-up and disposal:

1. Open a window and leave the room for at least 15 minutes.
2. Remove all materials you can **without** using a vacuum cleaner:  
   - Wear rubber gloves (don’t use bare hands).  
   - Scoop up fragments and powder with stiff paper or cardboard.
Wipe the area clean with a damp paper towel or disposable wet wipe. Duct tape can be used to pick up small pieces and remaining powder.

3. Seal the CFL pieces and clean-up materials in two plastic bags and place in the outside trash.

4. Wash your hands.

NCOWCICB

On July 10, 2006, House Bill 688 passed and became Session Law 2006-82. The law requires that, except for a few specific exemptions, anyone who installs, constructs, repairs, or inspects septic systems be licensed. During 2007, the NC On-site Wastewater Contractors & Inspectors Certification Board (NCOWCICB) has been busy putting the program into place and ensuring that the January 1, 2008 deadline is met.

Information about the statute, the Board, and upcoming classes is available at:

http://www.ncowcicb.info

The last Septic System Inspector course for 2007 will be held at the Brunswick County offices of NC Cooperative Extension on October 10th and 11th. Anyone interested in taking the class may register by contacting Joni Tanner at 919-513-1678.

Several Septic System Installer classes are scheduled or still being planned throughout the state. For those offered by the NC Septic Tank Association, contact Doug Lassiter or go to the following website:

http://www.ncsta.net

For the NC State University classes, contact Joni Tanner at 919-513-1678.

New Well Rules

The NC Department of Environment and Natural Resources On-Site Wastewater Section has had a name change. It is now the On-Site Water Protection Section. This came about because of House Bill 2873, which was signed into law last summer. The new statute is “an act to require permitting and inspection of new private drinking water wells and to require water quality testing of private drinking water wells.” All counties will now be required to enforce minimum statewide standards through local well programs. Before receiving approval for drinking, well water will be tested for 17 different possible contaminants, as well as for bacteria and pH. Counties have until July 1, 2008 to have local well programs in place.

Caring for a River video

North Carolina Cooperative Extension has released a video about Onslow County’s New River. The 32-minute video combines great waterway footage with interviews of several agencies, organizations, volunteers, and waterway users. Copies of the video have been made available to each middle and high school within Onslow. The video has also been aired on Time Warner channel 10 (G10 TV) and is available on the Onslow county government website:

http://www.co.onslow.nc.us/main/granicus/granicus.htm

Scroll way down to “G10-TV Featured Programming” and click on the Caring for a River video link. Enjoy!

NC Wildlife Resources Commission Upcoming Workshops

Outdoor Skills and Advanced WILD:

Mammals
September 18, 9 am - 1 pm
Clark Park, Fayetteville
Contact Name: Rebecca Montaldo
Contact Email: RMontaldo@ci.fay.nc.us
Contact Phone: (910) 433-1579

Reptiles
September 21, 9 am - 4:30 pm
Cool Springs EE Center, New Bern
Contact Name: Mike Campbell
Contact Email: mike.campbell@ncwildlife.org
Contact Phone: (252) 514-6663

Coastal Wildlife
September 25, 9 am - 4 pm
Halyburton Park, Wilmington
Contact Name: Andrea Talley
Contact Email: Andrea.Talley@wilmingtonnc.gov
Contact Phone: (910) 341-0863

GPS and Wildlife
October 9, 9 am - 1 pm
Jones Lake State Park, Elizabethtown
Contact Name: Jeff Corbett
Contact Email: jeff.corbett@ncmail.net

Black Bears
October 11, 9 am - 1 pm
Clark Park, Fayetteville
Contact Name: Rebecca Montaldo
Contact Email: RMontaldo@ci.fay.nc.us
Contact Phone: (910) 433-1579

Amphibians
October 26, 9 am - 4:30 pm
Cool Springs EE Center, New Bern
Contact Name: Mike Campbell
Contact Email: mike.campbell@ncwildlife.org  
Contact Phone: (252) 514-6663

**Fall Birds**  
October 30, 9 am - 3 pm  
Halyburton Park, Wilmington  
Contact Name: Andrea Talley  
Contact Email: Andrea.Talley@wilmingtonnc.gov  
Contact Phone: (910) 341-0863

**Basic Workshops:**

**Aquatic Project WILD**  
September 7 and 29  
UNC-W, Wilmington  
Contact Name: Mike Campbell  
Contact Email: mike.campbell@ncwildlife.org  
Contact Phone: (252) 514-6663

**Aquatic Project WILD**  
September 11, 9 am - 4 pm  
Clark Park, Fayetteville  
Contact Name: Rebecca Montaldo  
Contact Email: RMontaldo@ci.fay.nc.us  
Contact Phone: (910) 433-1579

**Project WILD**  
September 15 and 27  
UNC-W, Wilmington  
Contact Name: Mike Campbell  
Contact Email: mike.campbell@ncwildlife.org  
Contact Phone: (252) 514-6663

**Project WILD**  
October 10  
Clark Park, Fayetteville  
Contact Name: Rebecca Montaldo  
Contact Email: RMontaldo@ci.fay.nc.us  
Contact Phone: (910) 433-1579

---

North Carolina Cooperative Extension Service  
North Carolina State University  
Onslow County Center  
4024 Richlands Hwy.  
Jacksonville, NC 28540

---

**Word Search:**

Can you find the following words:

Phosphorus, runoff, pond, nitrogen, wetlands, habitat, bufferstrip, rivers, trash, restore, shoreline, waste, fertilizer, toxin, litter, pollute, nutrients, fish, watershed, lakes, filter, recycle, conserve, flow, oil

---

Sincerely,  
Diana M.C. Rashash, PhD  
Extension Area Specialized Agent  
Natural Resources-Environmental Education