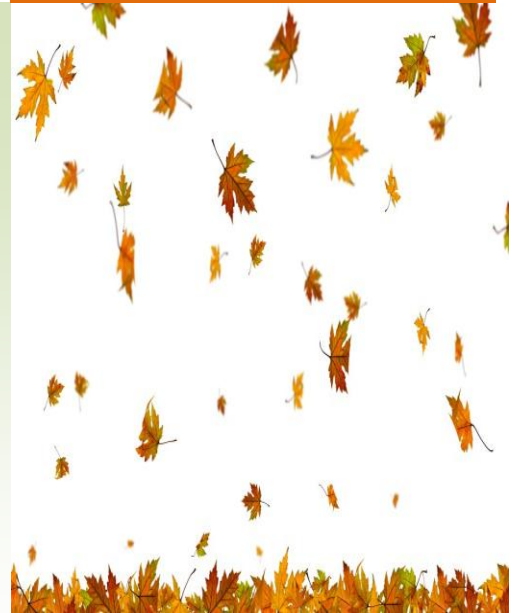


# The Conservatory



## ***Happy Fall and Year End Holidays!***

- Tim O'Connor

Only a couple of weeks ago, the leaves lit the deciduous trees with hues of brilliant color in the Northeast. Today many of those same leaves are dancing around on the green earth. I enjoy the changing of the seasons here as it induces a reflection on the past and preparation for what lies ahead.

The year thus far has been challenging in many ways for many people, but I believe it has also been a measure of open-mindedness, strength, resiliency, and discovery. This has been true as much in our global environment as it has in my local environment. Carbon indexed emissions, measured in ppm, are still rising and the debate on how to curb emissions globally continues. Concerns about the rising price of oil and its threat to domestic security are heating up on pace with the approach of winter. Additionally, the local harvest was disrupted by unprecedented levels of precipitation this past summer.

As the above themes mount, so too do positive signs. For global examples, we can look to the upcoming UN Conference on Climate Change and the recent International Day of Climate Action (10/24) sponsored by 350.org. Nationally, the Car Allowance Rebate System (CARS), aka cash-for-clunkers, and other dually economic and green stimuli are positive indications. Locally, we continue to see the launch or expansion of green businesses and greater accessibility of sustainable choices in the marketplace.

In this newsletter, I believe you will find content that helps both to inform your perspective on the above themes and to support your personal environmental plans. On behalf of all our contributors, I wish you a joyful holiday season. As well, cheers to a happy, healthy, and verdant New Year. -FV-

### *In This Issue:*

- Advice
  - Home Heating..... 3
  - Tailgating..... 4
- Awareness
  - Key Dates.....2
  - Did you know?.....3
  - Your EPA Region.....7
- Environmental Opinion
  - Cap-and-Trade .....2
- Environmental Report
  - Earth Day Pilot.....5
- Kids' word search.....3



**FOREVER**  
**VERDANT**

# ***Copenhagen Should Consider the Carbon Tax***

- Greg Krino

2

On December 7 - 18, 2009, national leaders will convene in Copenhagen, Denmark for the UN Conference on Climate Change. These leaders will discuss possible solutions to climate change, including a cap-and-trade system. No matter what happens, however, any solution to climate change faces four large obstacles: (1) massive global dependence on carbon; (2) hesitancy of governments to compromise military and economic power; (3) public skepticism fueled by a sizeable minority of scientists; and (4) distrust for government bureaucracy. Climate change in general, and cap-and-trade in particular, are complex issues that bring together science, politics, economics, national security, energy, and the environment. Myriad disciplines yield myriad opinions. Although cap-and-trade seems to be the most popular solution, US leaders should give the carbon tax another look. It may have a better chance of overcoming these four obstacles.

Under a cap-and-trade system, governments place a national limit on carbon emissions (e.g., tons per year) and auction off transferable pollution permits to certain regulated entities (e.g., coal or oil companies). Regulated entities would then be required to hold a sufficient number of permits to cover their environmental impact at the end of the year. To comply with the program, regulated entities would have to limit their emissions or buy permits from more efficient entities that emit less carbon and thereby have excess permits. The primary objectives of such a program are to mitigate climate change and move the world toward a non-carbon based energy system.

Advocates of cap-and-trade offer the following advantages: (1) certainty over the level of emissions; (2) less susceptible to politics; (3) more flexibility in times of recession. Both advocates and critics of cap-and-trade point to the success of the sulfur cap-and-trade system that was implemented in the US in the 1990s as a way to reduce acid rain. See <http://www.edf.org/page.cfm?tagID=1085> (advocates); <http://www.carbontax.org/introduction/> (critics). Right now, the EU has a cap-and-trade system, which is a likely reason why the US may go the same route.

As an alternative to cap-and-trade, many economists and others have advocated a simple carbon tax. The advantages of a carbon tax include: (1) predictability in energy prices; (2) quicker implementation; (3) ease of understanding; (4) less susceptible to manipulation; and (5) even impact across economic sectors. See [http://whatmatters.mckinseydigital.com/the\\_debate\\_zone/carbon-tax-vs-cap-and-trade](http://whatmatters.mckinseydigital.com/the_debate_zone/carbon-tax-vs-cap-and-trade). It is true that a carbon tax and cap-and-trade have some of the same advantages. This highlights the debate between the two systems and that well-intentioned parties can simply disagree on the best approach.

Taxes have been used to curb pollution before and it seems that they have worked. In the early 1990s, the government taxed chlorofluorocarbons (CFCs) in order to decrease the hole in the ozone layer. The tax was increased slightly each year until CFCs were virtually eliminated, and the ozone layer recovered by the end of the decade. A carbon tax may have the same effect, albeit over a much longer period of time, as so much of our economy depends on carbon. Tax policy is beyond the scope of this article; but to me, it seems simpler to use the IRS and EPA to enforce a carbon tax. They are existing entities with existing means to enforce the policy. Cap-and-trade will create an entirely new trading market that will include private participants and government regulators. Both systems require a regulator to measure carbon emissions, and another regulator to ensure tax/permit compliance. But a cap-and-trade system will include additional market participants: broker-dealers, speculators, and a regulatory agency akin to the Securities and Exchange Commission (SEC). Once the public realizes that both systems ultimately "tax" carbon, then they will likely prefer the simpler version – a carbon tax.

Neither cap-and-trade, nor a carbon tax will be easy because of the world's dependence on carbon. But both systems have been used on smaller scales in the past, and both have worked (e.g. sulfur cap-and-trade, and CFC tax). The issue of climate change is highly political, as most nations, including the US, will be hesitant to compromise their military and economic power by giving up oil and coal. Nearly all of the energy in the world comes from these sources – both of which contribute to climate change. For this reason, even if the world agrees to cap carbon emissions, there will be an incentive to cheat. Although the scientific community is fairly certain that humans are causing climate change, there is a sizeable minority of scientists and others that have been successful at casting doubt on the matter. In a time of bailouts and trillion-dollar government stimuli, there is a growing distrust of bureaucracy. A carbon tax may be the better solution, and the Copenhagen Conference should consider it. **-FV-**

## **Key Dates for Nov – Dec '09:**

**November 15**

**America Recycles Day**

**December 3 World  
Conservation Day**

**December 7-18  
UN Climate Change  
Conference**

## Staying Warm (and Green)!

- Erin Shea

3

Fall is here, which means colorful leaves, football, soup, and time to turn on the heater. According to the Department of Energy, 31% of our home's energy usage is used for heating. There are many different ways to heat your house, each with its own set of benefits and drawbacks.

Furnaces, typically fueled with natural gas or fuel oil, are rated based on their Annual Fuel Utilization Efficiency (AFUE). Look for this number on the yellow Energy Guide tag when shopping for a new unit. Energy Star furnaces will have an AFUE of at least 90%. Condensing furnaces are more efficient than non-condensing furnaces because they extract and utilize the heat from waste exhaust (which causes the water vapor to condense in the flue, hence the name). Be sure to change the filter monthly as this will extend the life of the equipment by keeping your furnace from working too hard. Also, be sure to have a carbon monoxide detector in your house if you have a combustion furnace. If you live in a moderate climate, using a heat pump is your best option. Heat pumps can have an efficiency of over 300%, meaning they produce three times as much heat as the equivalent amount of input energy.

### Did you know?

Burning leaves produces particulate matter and hydrocarbons, which contain a number of toxic, irritant, and carcinogenic (cancer-causing) compounds. Leaf smoke also contains carbon monoxide.\* We suggest to add them to your compost instead! \*Source: EPA

### Kids' Word Scramble:

1. The protection of natural resources: **NCNOOVATIRES**
2. A word that means "green": **DVRETNA**
3. Chemicals that harm the environment: **TTLLOUSNAP**
4. Reduce, Reuse, **CRLEEYC**
5. Species that may soon become extinct: **GREDNADENE**
6. Decaying material that makes the soil rich: **TOPSMOC**
7. What outdoor fall items should you not burn? **EVALES**

A heat pump heats your home by reversing the refrigeration cycle, meaning it is an air conditioner working the opposite way. The heat pump collects heat from a source, either air, water, or the ground, and transfers that heat into your home. When a heat pump is in the cooling mode, it transfers the heat inside your home and dumps it back to the source. Heat pumps have two different energy efficiency ratings: the Seasonal Energy Efficiency Ratio (SEER), which rates the efficiency of the cooling cycle, and the Heating Seasonal Performance Factor (HSPF), which measures the efficiency during the heating season. As temperatures drop, air-source heat pumps will decrease in efficiency and cease to work below about 10°F, so they require a backup heat source for colder climates. Ground-source heat pumps, also known as geothermal systems, utilize the heat in the soil's fairly constant temperature (below the frost line). Even in the northern US, where ground temperatures may fall between 40°F to 50°F, a geothermal heat pump will only need to boost these temperatures by about 25°F to reach a comfortable level.

Passive solar heating is a method of heating or supplementing your home's heat. It requires up-front design but no on-going energy-related expenses. Appropriate passive solar techniques vary depending on geographic location, but some of these techniques include orienting one wall of your home to be south-facing and installing large, insulated windows to allow solar energy in during the day, using thermal curtains at night over windows to trap the heat in, and placing thermal mass near the large windows. The thermal mass will store heat and radiate it into the room at night. Thermal storage materials could be the floors, ceiling, and wall, and can be as simple as a concrete slab floor or masonry walls. "Water walls", dark-colored interior walls imbedded with some type of water containment, absorb and release heat more quickly and evenly than masonry.

Consider your home's envelope when thinking about the efficiency of your heating system. The house needs to be sealed up properly to prevent heat from escaping and to minimize heating costs as much as possible. Envelope improvements such as adding insulation, sealing cracks and seams around windows, doors, and plumbing and electrical penetrations to the exterior, installing double-pane windows, and replacing doors that do not tightly seal will increase your comfort during the fall and winter. Happy heating season! **-FV-**



## Go Team Green

- Heidi Hafner

For many of us, one of the joys of autumn is sitting in the bleachers as we watch our favorite football team score touchdowns against its long-time rival. Unfortunately, football games and similar venues can take its toll on the environment. Just think about the number of empty Styrofoam cups that accumulate under the bleachers or how many foil wrappers you witness blowing far away from the hot dogs they once held. While we wouldn't dare suggest you avoid the fun of attending a game, we would like to offer a few suggestions to make your experience a little greener.

- *Bring your own food and reusable utensils.* This is easy if you are planning to tailgate. Some stadiums, however, have rules about what you can and cannot bring into the actual game. So if full coffee thermoses are not permitted, consider bringing an empty mug for the concession stand to fill.
- *Wear your team colors.* This may appear to have no connection to going green, but if you are already wearing team apparel you will likely be less tempted to buy overpriced merchandise that will only end up in the trash. (Think about those hideous foam fingers.) And of course, this will also save money.
- *Take public transportation or carpool.* In addition to saving energy, you and your friends will avoid the frustration of trying to find one another in those massive parking lots.
- *Recycle!* Most stadiums have conveniently located recycling bins, but just in case you have trouble spotting one, save your items for later. There is a good chance you will pass a recycling station on your way out, or you can always bring them home. **-FV-**

*"The best time to see wildlife is very early in the morning near water. Sit quietly, and wait, and watch. You may be lucky enough to see a fox or a weasel, or at least a... raccoon, opossum, cottontailed rabbit, or native and migrating birds of many kinds."*  
*The Book of Trails*  
*Redding, Connecticut*

## The Green Market - Josh LaFlamme

Buying 'green' and saving green are sometimes assumed to be mutually exclusive of one another. Historically, environmentally sensitive goods have come at a considerable premium. Given the current economic recession within the United States, one might thus conclude that the market for 'green' products such as health foods and biodegradable garbage bags has shrunk accordingly within the past year. Research, as well as first-hand information from a 'green' store owner, have led me to the conclusion that, yes and no, these assumptions are correct.

"People don't perceive their purchases here as a sacrifice. They're getting a good value for their money, a product that they can feel good about buying," says Tish Vredenburg, owner of Ridgefield, Connecticut's Practically Green. The store's website, GoPracticallyGreen.com, details both the store's history and its owner's vision. During the "eco-friendly" renovation a 300-year-old house into retail and office space, Vredenburg lamented the scarcity of eco-friendly shopping options. She realized that many others must have wanted "a store that makes it easy, cost effective, and fun to go green." Practically Green opened its doors for the first time last fall. "Everything in the store is recycled, recyclable, biodegradable and/or organic."

On the other hand, the health food super chain Whole Foods witnessed falling profits until just recently. According to the Market Watch article "Whole Foods: Sales have stabilized and 'turned corner'," share values for Whole Foods Market Inc. have been declining until measures such as the "Whole Deal" discount program were implemented. "Since late September," reads the article, "Whole Foods said identical store sales have risen 0.4% and that total sales are up 5.4%" As of now, Whole Foods has plans for further price cuts.

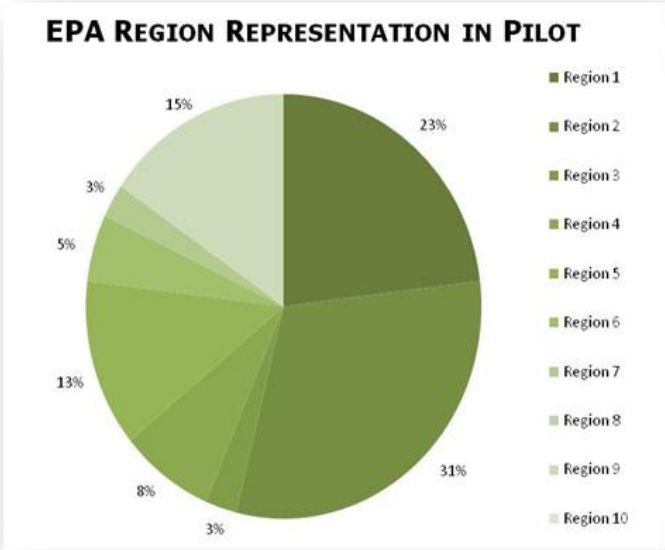
So what types of environmentally-friendly products are people buying? Popular items include reusable travel mugs which eliminate the need for disposable containers, and solar-powered flashlights which reduce battery consumption. As consumers are recognizing the negative impact plastic bags have on the environment, more and more shoppers are investing in reusable canvas bags for their grocery and clothing purchases. The use of recycled paper over paper manufactured from new material is increasing as well. Perhaps one of the biggest breakthroughs in green products is the BioBag, a cornstarch-based waste bag that helps to eliminate regular plastic bags from our environment. Bio Bags are free of Polyethylene and are biodegradable.

Aside from utilitarian products, luxury items such as beeswax candles and organic body lotions are filling shopping carts. And so, while the economy is most definitely affecting most people's purchasing power, it is reassuring that the market for earth-friendly merchandise is continuing to evolve. **-FV-**

# Earth Day Pilot Results Overview

- Tim O'Connor

On Earth Day, invited participants took part in a 30-minute web-based pilot study as part of Forever Verdant's program to create a household environmental index and learn more about potential customer sentiment regarding products and services envisioned by our team. We want to thank those that participated in this informative and instructive pilot and also share a small sample of some of the outcomes from the survey that we thought you would find interesting.

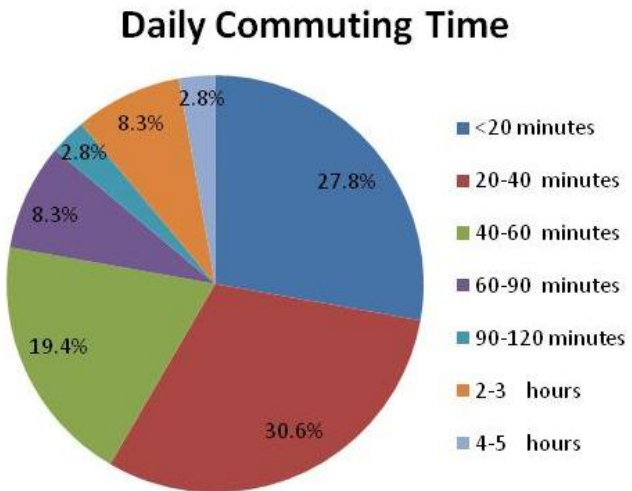


The pilot participants were diverse in their occupational and geographic composition. This heterogeneous sample enabled us to draw reliable conclusions about the broad market we intend to support. For example, the participants represented 24 different occupational classes from *Accounting and Finance* through *Restaurant and Food Service*. Additionally, the pilot crossed 8 of the 10 EPA defined regions as depicted by the adjacent chart.

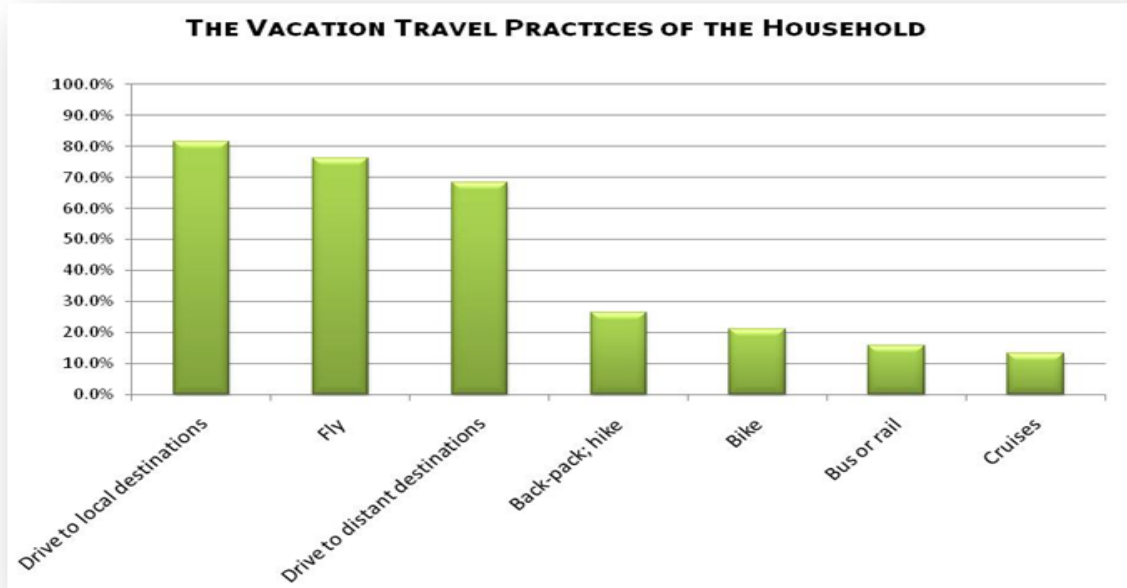
Our pilot study began with assessing sentiment regarding four of the factors that comprise our Verdant Index™. Not surprising given the state of our economy and the financial consciousness of our culture, many in our study felt

strongest about saving money while “going green”. However, you might find it interesting that most people, as represented by our pilot participants, identify health and safety as their primary motivation for improving the quality of the environment. Though we know people want being green to be more seamless, or as we say, *eco-livable*, than it is today, this ranked relatively lower than the other factors on our list.

Environmentalist or not, you might like to see how your daily commute to school or work compares to that of other participants in the survey. The good news for most is that their commuting time is less than one hour, round trip. However, twenty percent of participants have greater than a one hour commute and close to ten percent have between a 2-3 hour commute (I can identify with these participants). The length of one's commute can present some quality of life issues as well as some risks to the environment. In an economic and real estate setting where employers may not support relocation, we recommend improving the quality of your commuting experience in a few different ways. First, if possible, use mass transit. This can provide you with a routine and the time you do not spend driving offers you time to relax, read, or prepare for a presentation. Secondly, we recommend tele-commuting for office workers. The telephonic, broadband, and cellular networks have improved to such high quality in many areas that it is often seamless to do the same work from the comfort of home office. Many companies have programs to support tele-commuting because in many cases it is more cost effective than providing office space for employees. If telecommuting is not an option, we recommend either recreational modes like bicycles for short commutes or car pooling. These options can reduce the stress of the daily commute on you and the environment. For more on commuting, see our article from the Spring edition of *The Conservatory* - [Link](#).

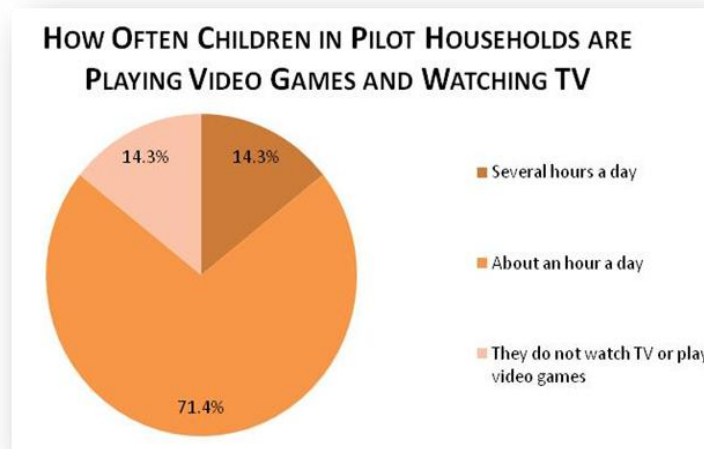


Enough about work, let's talk about holidays and vacations. As we prepare for vacations and holiday travel this season, you may be interested to see the preferred travel methods of your fellow vacationers. We were happy to see that *driving to local destinations*, which may be influenced by the environmental trend towards eco-tourism (and the global trend of trying to save \$\$\$), ranked highest. We also know that some of

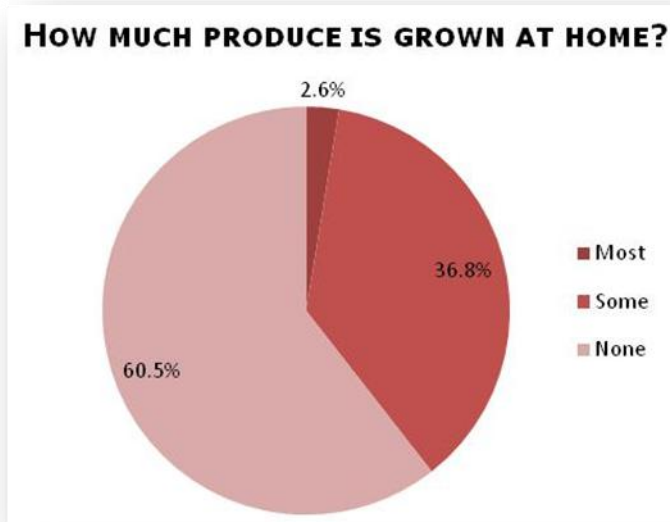


our readers enjoy the cruise getaway, and we understand your love for the floating revelry, but based on the ecological impact of many cruise liners we were also somewhat relieved to see that this comprised a lower percentage on the scale of potential modes of vacation transportation.

Apart from vacations, how often are parents encouraging their children to play outdoors? Most children in the households involved in the pilot spend about an hour a day watching TV or playing video games. We hope this means kids are spending more time outdoors and we found this encouraging given the health benefits and carbon neutral nature of the outdoors. However, given similar studies on this topic, we believe that if our scale had been different (options not selected by participants: *A few times a month*; and *Rarely*), or if we had included the home computer, which is increasingly popular among children, the responses would have been more in line with other studies' results, i.e. more indoor time than is considered healthy. Given the conservative nature of the responses depicted above, we hope parents looking to make the case to their children will find this graph helpful.



## Earth Day Pilot Results Overview (cont'd)



For those families trying to encourage outdoor activities or for households looking to save money and improve the quality and health of home dining, there is a broad opportunity to improve the implementation of the household garden. We considered that many of the urban dwellers that took part in the pilot may not know where to start given some of their land constraints. We also wondered if the population represented by this sample considered the possibility of indoor gardens for some of the basic spices and other cooking ingredients that would add to the kitchen's health and ambience while utilizing minimal space. For those urban dwellers, we would encourage you to look at the article in our Summer edition of *The Conservatory* - [Link](#). For those

considering indoor gardens or starter kits, we are taking note of the results of this question along with others in this survey and contemplating how we at Forever Verdant might help.

### Which EPA Region am I in?

- Region 1** - (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)
- Region 2** - (New York, New Jersey)
- Region 3** - (Pennsylvania, Delaware, Maryland, West Virginia, Virginia, Washington D.C.)
- Region 4** - (Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Florida)
- Region 5** - (Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio)
- Region 6** - (New Mexico, Texas, Oklahoma, Arkansas, Louisiana)
- Region 7** - (Nebraska, Kansas, Missouri, Iowa)
- Region 8** - (Montana, North Dakota, South Dakota, Wyoming, Utah, Colorado)
- Region 9** - (California, Nevada, Arizona, Hawaii, Guam, Trust Territories, American Samoa, Northern Mariana)
- Region 10** - (Alaska, Washington, Oregon, Idaho)

#### Forever Verdant

19 Great Oak Lane  
Redding, CT 06896  
P. 203.938.3351

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

