

Conservation Watch

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Global Warning: Our Last Chance for Change?

A Primer on Global Warming

The Most Serious Environmental Problem Facing the Planet

In 2006, The Garden Club of America (GCA) National Conservation and National Affairs and Legislation Committees addressed the serious reality of global warming. The Committees crafted a position paper which states that “global warming compels GCA to educate its members and the public about the causes and consequences as well as ways in which to respond.” The job of educating is a work in progress.

Although global warming doubters still exist, their numbers are diminishing. The world’s credible scientists - those who publish regularly in peer-reviewed journals - agree that there no longer is a question as to the cause of global warming. Worldwide, tailpipes and smoke stacks spew 25 billion tons of carbon dioxide into the atmosphere every year. There is no doubt that this gas from human activity is contributing to heating the earth and causing the climate to change, taking us far outside natural ranges toward “tipping points” beyond which large scale consequences may be irreversible. The question now centers around how much and how fast.

Effects of climate change are already being felt. Although it’s too late to prevent warming entirely, the situation is not hopeless. But, since warming is occurring even faster than predicted, urgent action is needed. Through the combined cooperation and efforts of governments worldwide, as well as the



business community, scientists, and individuals, it is still possible to protect the health of our planet for future generations.

Michael Oppenheimer, a lead author of the recent Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), former Chief Scientist for the Environmental Defense Fund, and currently a climate scientist at Princeton University, outlines how individuals can help stabilize climate change. Because legislation will be the driving force behind slowing global warming, citizens must demand action from their legislators to curb greenhouse gases at the local, state, and, most importantly, federal levels. Even doubters will agree that we all want clean air and clean water - a healthy environment now and in the future. Read this issue and be part of the pollution solution!

*Penny Thomas, G.C. of Princeton (NJ) - Zone IV
GCA NAL Committee
Vice-Chair – Climate Change*

[Note: **greenhouse gases** - Any of the atmospheric gases that contribute to the greenhouse effect by absorbing infrared radiation produced by solar warming of the Earth's surface. They include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (NO₂), and water vapor.]

21st Century choice: Look after our planet and it will look after us, or don't and face the consequences.

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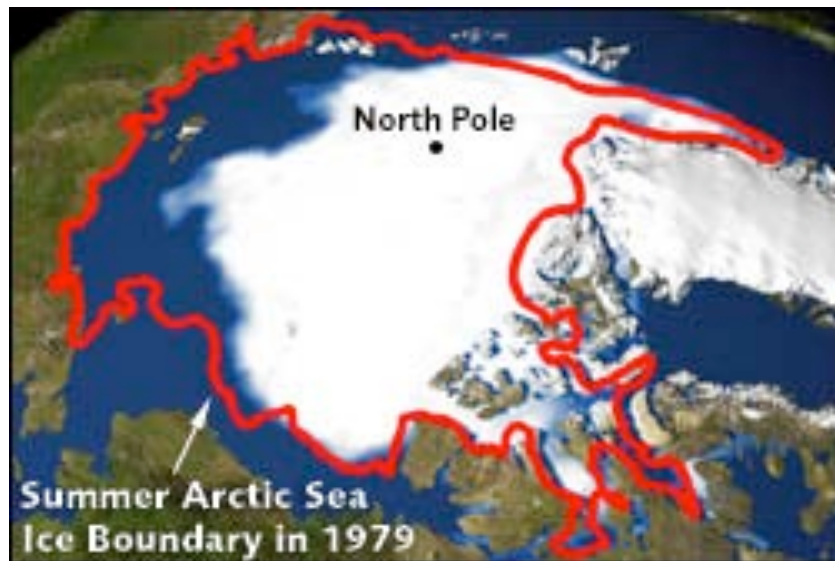
How Do We Know It's Happening?

There is not a reputable climate scientist in the world who does not, to a greater or lesser extent, agree that the planet is warming at an alarming rate and that this warming is at least partially caused by human activity. Carbon stored in the earth over millennia has been released into the atmosphere as "greenhouse gases" in a single century.

We need to be especially concerned. The United States is a major contributor to this phenomenon. **With about 5 percent of the world's population, our country produces roughly one-quarter of these gases.**

Consider these basic facts about global warming and climate change:

- Average temperatures have climbed 1.4 degrees Fahrenheit (0.8 degree Celsius) around the world since 1880, primarily in recent decades, according to NASA's Goddard Institute for Space Studies. The year 2006 is considered to be the warmest in history.
- The rate of warming is increasing. The 20th century's last two decades were the hottest in 400 years and possibly the warmest for several millennia, according to a number of climate studies. And the United Nations' Intergovernmental Panel on Climate Change (IPCC) reports that 11 of the past 12 years are among the dozen warmest since 1850.
- Another report from the IPCC, issued in 2007, forecast dramatic reduction in African food production and the flooding of many low lying ocean nations.



Since 1979, the size of the summer polar ice cap has shrunk more than 20%.
(Illustration from NASA.)

Change can already be noted in many parts of the world. Here's what's happening:

- The Arctic is feeling the greatest effect of climate change. The summer of 2007 in the Arctic saw the most dramatic shrinkage of sea ice on record. Summer, 2008 is on track to exceed 2007 in loss of sea ice. Arctic ice is rapidly disappearing; the region may have its first completely ice-free summer by 2040 or earlier. Polar bears as well as other animals and indigenous cultures are already suffering from the sea-ice loss.
- The Greenland ice sheet is melting and will affect worldwide ocean levels. The time frame and actual increase are debated, not the fact of the melting.
- Glaciers and mountain snows are also melting rapidly. Montana's Glacier National Park

now has only 27 glaciers, compared to 150 in 1910. In the Northern Hemisphere, thaws are beginning to come a week earlier than normal in spring and freezes begin a week later.

- Coral reefs, which are highly sensitive to small changes in water temperature, suffered the worst bleaching, or die-off in response to stress, ever recorded in 1998, with some areas seeing bleach rates of 70 percent. Experts expect these sorts of events to increase in frequency and intensity in the next fifty years as sea temperatures rise.

The debate is no longer whether global warming is occurring, but how much and how fast. The question the scientific community is asking now is where to go from here.

*Diane Stoner, Litchfield G.C., (CT) - Zone II
GCA Conservation Committee
Vice-Chair - Climate Change*

Update on the Bali Conference

In December, 2007 the United Nations Climate Change Conference convened in Bali, Indonesia with 10,000 participants from 180 countries. Its purpose was to chart a roadmap to a new agreement on climate change to replace the 1992 Kyoto Accords before 2012 when Kyoto expires. The Kyoto Accords attempted to freeze emissions at 1990 levels and set future goals for individual countries. Many of the nations participating in Bali have been unable to meet these goals, much less set new ones. The crux of the debate revolved around both a realistic target date for freezing of emissions and whether compliance should be mandatory or voluntary. Climate change discussions pit the developed world against the developing world against the undeveloped world. Active American participation is essential to the success of any agreement. At the conference, the American delegation finally agreed to work toward an agreement on emissions reduction.

*Diane Stoner, Litchfield G.C. (CT) - Zone II
GCA Conservation Committee
Vice-Chair – Climate Change*

How Our Planet Is Affected

The Oceans

Oceans are an integral part of the earth's complex ecosystem and make up 70 percent of the earth's surface. They store a thousand times more heat than the atmosphere does and play a key role in regulating the global climate. The rise of average global temperature has led to a significant rise in ocean temperatures. What follows is a brief description of how this rise in temperature affects our vibrant ecosystems.

Greenhouse gases, the most prominent of which is carbon dioxide (CO₂), are created to a great extent by the burning of fossil fuels needed to drive cars and to generate electricity in power plants. These "necessities of modern life" produce pollutants that result in retention of greenhouse gases that are absorbed in the earth's atmosphere and subsequently into our oceans. As the oceans collect CO₂, they become warmer and more acidic, which leads to a

drastic change in their chemistry. The changing chemistry is having a devastating impact on ocean life. It can cause the destruction of the ocean food chain from the bottom up. One of the known consequences, for example, is that warmer water triggers the bleaching of coral and threatens other marine organisms that secrete skeletal structures. Coral reef systems are one of the oldest and most fragile ecosystems. Home to 93,000 plants and animal species, they provide habitat and food for many creatures. The combination of CO₂ and high sea temperatures threatens the survival of all of these life forms.



Bleached coral.

Global warming also causes sea levels to rise dramatically. The rise in sea level is due to two separate phenomena:

- Thermal Expansion: Warmer water takes up more room than cooler water, causing sea levels to rise.
- Melting Ice: Glaciers on Greenland and elsewhere in both northern and southern hemispheres continue melting at rapid rates. (Where ice has been on land and is then transferred to the ocean, sea levels rise.) Rising sea levels may completely submerge low-lying island nations and could have devastating consequences on coastal communities all over the world.

Satellite images from 1979 to the present time show a dramatic increase in Arctic ice melt. Consequences of the melting Arctic ice are likely to be severe to many arctic species of plants and animals. For example, we have become familiar with the demise of the polar bear and how the changes to ice patterns directly affect their ability to hunt seals.

There is also great concern regarding the disruption of the ocean's currents, known by scientists as the Ocean Conveyor, because they circulate heat through the ocean's basins. These currents play a fundamental role in regulating earth's climate. They are critical in cooling, warming, and

watering the earth's surfaces and in transferring heat from the equator to the North and South Poles. Significant change in water temperature could disrupt the surface patterns of the Ocean Conveyor and currents such as the Gulf Stream would be impacted, which could result in both gradual and abrupt climate change.

Garden club members need to educate themselves about the impact global warming has on oceans. The GCA position paper on Global Warming, states that the GCA "supports initiatives to protect oceans, which produce over two thirds of the world's supply of oxygen and over half of its biological production." Clearly, one of the most pressing environmental threats facing earth is related to preserving the oceans' health.

*Anne Jennings, Mill Mountain Garden Club (VA) - Zone VII
GCA Conservation Committee, Vice-Chair – Oceans*

Water



Lake Powell, Sept., 2004. Photo by Gretchen Downs.

If a picture is worth a thousand words, then little more needs to be said about the effects of global warming on water. The white line shows the high water mark that Lake Powell reached on June 22, 1980. Today, the water level is 50% of its high water mark.

What does this have to do with global warming? The only way to determine the effect climate change will have on water supply is to study climate models. When all models point to the same conclusions, they cannot be ignored. According to the Intergovernmental Panel on Climate Change (IPCC) the data shows a drying out of areas such as southern Europe, the Middle East, North Africa, South Australia, Patagonia and the U.S. Southwest.

Global warming impacts different regions in different ways. In the Arctic, the warming temperatures increase the ice melt causing a rise in water levels. Coastal regions such as San Francisco and New Orleans face loss of shoreline and increased salinity of their fresh water inlets.

Glaciers in Northern latitudes are receding at an increased rate. "Some parts of the world, including a broad swath of Asia and India, rely heavily on glacial runoff during summer months. That flow is expected to increase as the glaciers recede because of warming. Unfortunately, that postpones the water shortage. "When it comes, it will likely arrive, abruptly, with water systems going from plenty to want in perhaps a few decades or less," said Tim Barnett, a scientist with the Scripps Institution of Oceanography.

Warmer temperatures have the effect of decreasing snow levels and contributing to an earlier snow melt. Regions that depend on snow melt for water supply, such as the Sierra Madres watershed, will be negatively impacted. Even if the precipitation level stays the same, the warmer temperatures will bring large amounts of water at some times and leave the summer months with a mere trickle.

Stephen Schneider, editor of the journal *Climatic Change* states that the future is clear, "As the air gets warmer, there will be more water in the atmosphere. That's settled science." But where, and when, it comes down is the big uncertainty. Many areas will see increased rainfall and more violent storms, while other areas will experience severe droughts.

Doug Struck, in an article for the *Washington Post*, August 20, 2007, states, "Humans have long attempted to reconcile nature's inconstancies with giant plumbing: reservoirs and dams that hold back floodwaters for more gradual release; dikes and other barriers to protect developed areas; canals and pipelines to take water from wet areas to dry. But that kind of infrastructure is expensive, especially for Third World governments. Environmentalists decry the impact on wildlife. And building dams in earthquake zones tempts disaster."

All of this brings us back to the haunting white ring around Lake Powell. It is a constant reminder of the effect of climate on our water supply. We have tried to change nature to suit us, but perhaps we need to change to suit nature.

Gretchen Downs, Country G.C. (Ohio) - Zone X
GCA Conservation Committee
Vice-Chair – Water, Wetlands, Great Lakes

[Sources: 2006 United Nations Human Development Report.

Cowen, Robert C., "To Track Global Warming, Watch the Water Flow," *The Christian Science Monitor*, May 19, 2005.

Hall, Carl T., "Global Warming Study Forecasts More Water Shortages," *The San Francisco Chronicle*, November 17, 2005.

Struck, Doug, "Warming Will Exacerbate Global Water Conflicts," *Washington Post*, August 20, 2007, page A08.]

Our National Parks

The huge acreage encompassed by the National Parks tells a much more vivid story of environmental damage than the one unfolding in the fractured ecosystems of our own backyards. The effects of global warming are so glaring that the National Park Conservation Association has called the National Park System, the canary in the coal mine.

In **North Cascades, Yosemite, and Sequoia and Kings Canyon National Parks**, glaciers are retreating. Park scientists predict that there will be no glaciers in **Glacier National Park** by 2030. Historically, slowly melting winter snow packs have filled reservoirs and summer streams. As temperatures rise, winter rain replaces snowfall. Unlike the slowly melting ice pack that provides relief during the hot, dry summer months, rainwater quickly rushes down banks, fills rivers and runs out to sea. The accompanying coastal flooding threatens the submergence of coastal lands. **Historic Jamestown National Historic Site** already sits below the 100-year flood plain. Sea levels at **Raleigh National Site, Cape Hatteras National Seashore** and **Wright Brothers National Memorial** are rising at a rate well above the global average.



1941



2000

Muir Glacier, Glacier National Park

Rising water temperatures threaten the habitats of mountain streams and marine environments. The trout in **Great Smokey Mountain National Park** are at the extreme edge of their natural habitat. The coral reef system in **Biscayne** and **Dry Tortugas National Parks** is a nursery for reef fish and marine animals and is important in mitigating the effects of storm-generated waves. Warmer seawater generates stronger storms, threatens the survival of fish and fosters coral disease, which has increased four fold since 1994.

Native pine and spruce bark beetle populations and non-native adelgids are thriving in warmer temperatures and destroying entire forests. White bark pines in and around **Yellowstone National Park** face extinction from the onslaught of the bark beetle. Their decline limits an important food source for the grizzly bear. Disappearing forests and glaciers foretell a future of catastrophic wildfires.

Our Parks provide corridors within their borders and beyond to public lands where whole ecosystems can migrate and adjust to changing climates, as is happening in **Gates of the Arctic National Park and Preserve**. The Parks have a unique opportunity to show visitors the effects of greenhouse gas emissions, to offer solutions and to advocate for renewable energy. The National Park System will celebrate its 100th birthday in 2016. Tom Kiernan of the National Park Conservation Association has said “The National Parks offer a

unique opportunity to draw attention to America's priceless resources at risk, and to showcase opportunities to act to protect them."

In September of 2007, the Government Accountability Office, the investigative branch of Congress, released a report stating that managers "have limited guidance about whether or how to address climate change. . .Without such guidance, their ability to address climate change and effectively manage resources is constrained." These conclusions are relevant to all federally controlled land, which is 30% of the US, 600 million acres and 150,000 square miles of protected waters.

*Lloyd Brown, The Weeders (PA) - Zone V
GCA Conservation Committee
Vice-Chair - National Parks/Public Lands*

[Note: [adelgid](#) - any of various insects that feed and form galls on conifers.]

Energy

Could anyone who lived in colonial America have envisioned a climate warmed by sources of energy that extend around the world and into space? Then, more than 200 years ago, horses were used for transportation; boats powered by wind and sails; wooden plows pushed by hand or pulled by horses on farms; and light and heat were made by individuals using wood to create fires.

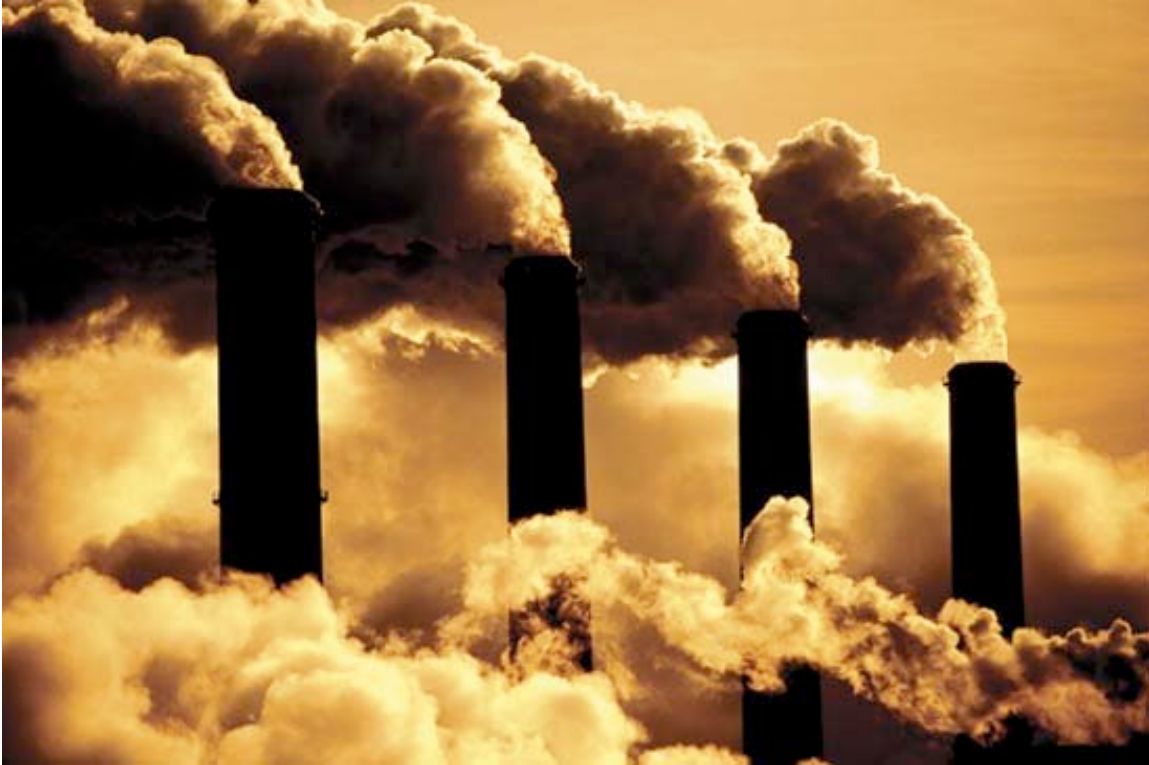
Then change came fast. The industrial revolution of the 19th century introduced coal as the main source of energy to power factories. With the invention of the automobile in the early 20th century, oil became the vital ingredient in transportation. Soon utilities used both coal and natural gas to provide light and heat to a growing population through the distribution of electricity. In two centuries, we became totally dependent on sources of energy that play a part in causing the earth's temperature to rise substantially.

As a new century unfolds, our challenge has become how to reduce or eliminate our dependence on these energy sources. At the end of 2007, Congress enacted an energy law that mandated greater automobile fuel efficiency – a fleet-wide average of 35 miles a gallon by 2020 for cars and trucks. It also required a five-fold increase in the production of ethanol – 36 billion gallons by 2022. Unfortunately, the final compromise eliminated the provision that utilities should produce an incrementally increasing amount of electric power from renewable sources, as many states currently require. Subsidies for wind, solar, geothermal and other alternative energy sources would have been funded by removing subsidies for oil companies. This provision was opposed by the current administration.

While there is a great deal of enthusiasm in the "farm belt" for the production of ethanol, many scientists doubt its viability as an alternative to fossil fuels. They cite the creation of greenhouse gases in its production from corn kernels, together with lower fuel efficiency, as cause for concern. Ethanol made from cellulosic biomass – corn stalks, wood chips, switch grass – isn't commercially viable at present.

In the field of utilities, coal-fired power plants are the single largest source of man-made carbon dioxide. Utilities no longer select clean-burning natural gas because it has become very expensive. Many experts advocate clean nuclear power, but these plants require large capital

investments. Another obstacle to their proliferation is the uncertain status of Yucca Mountain in Nevada as the ultimate nuclear waste repository. Most knowledgeable observers believe that solar and wind will play only a small role in the nation's energy sources without significant government subsidies.



Factories that burn fossil fuels help to cause global warming.

Few think of “conservation” as an energy source, but it should be a key strategy to combat climate change. The average household can realize big energy and dollar savings with effective insulation, efficient appliances, compact fluorescent light bulbs, automatic thermostats, and fuel-efficient cars. Conservation lacks an organized, powerful lobby like agriculture, coal or oil. It is citizens who must lobby for conservation at all levels of government and incorporate it into their daily lives.

*Maureen Ogden, Short Hills G.C. (NJ) - Zone IV
GCA NAL Committee
Vice Chair – Energy Sources*

Helpful Hints – What Can You Do?

Pass It On

What could we do with several boxes of swimming trophies won by our boys, who are now men? They sorted through them (not willingly, but we mothers can be persuasive), took a few cherished medals, and left the rest. I turned to a local resource to find them a new home. It is



an invaluable booklet called, “Pass It On,” that lists 120 organizations in our area where we can donate usable stuff from appliances to vehicles (the Website is www.cuyahogawd.org). Our county’s solid waste district distributed the guide.

Ultimate result for the trophies? They were taken to a local YMCA, where they were gratefully received. All they had to do was slide out the little brass plate and insert a new one. For pennies, an attractive trophy will grace the room of – and hopefully, fuel the dreams of – another young swimmer. Everybody wins, including the local landfill. If you check with your City Hall, service department, or county offices, you might be able to locate a similar resource in your area. If you don’t find one, its creation could become a club project that would benefit the entire community.

*Joan Gretter, Shaker Heights G.C. (Ohio)
Zone X Conservation/NAL Representative*

Paper or Plastic?

Have you been locked into the idea that there are only two choices: paper or plastic? A third alternative is to carry your own reusable bags for your shopping purchases. Here are some of the hard facts about single-use bag waste:

- The average American uses 300 – 700 plastic bags every year.
- If all the bags used in the U.S. in one year were tied together in a giant chain, it would reach around the earth 760 times!
- According to the American Forest and Paper Association, in 1999 the U.S. used 10 billion paper grocery bags, requiring 14 million trees to be cut down.
- Plastic bags don’t biodegrade, they photo-degrade – breaking into small toxic bits contaminating soil and waterways and harming fish.

The GCA Conservation and NAL Committees recently considered two alternative choices. One comes from ChicoBag.com. The bag comes with an integrated pouch to keep it in your pocket, purse, or glove box. It weighs 1.5 oz., is about 18” X 18” when un-stuffed, and holds 20 lbs. It’s made of nylon in a host of colors. The second choice, of many out there, comes from GoGreenBag.com and is made of polypropylene. There are many styles available, but some fold up into a 6” X 3” Velcro or zip cased closure for ease of carrying. A Green Bag can hold up to twice the amount of a standard disposable bag and can replace hundreds of them over its life-time. Green Bags have a stay open design that allows for easy loading. Both bags have handles to make lifting items easy. The prices for the reusable bags vary from about \$2.50 to \$5 each, but is a longtime investment. Logos can be placed on bags and they are cheaper of course in quantity. Many club conservation committees are distributing reusable bags to their members and using them in their fundraising efforts. So, consider having a supply of these bags handy when it’s time to “bag it.”



*Suzanne Roth, G.C. of Philadelphia (PA)
Zone V Conservation/NAL Rep*

*Ann Lyman, Piedmont Garden Club (CA) - Zone XII
GCA NAL Committee, Vice-Chair – Forests/Redwoods*

Drink Deeply – From the Safest and Best Containers

I was feeling pretty pleased with myself for having my Nalgene (#7) plastic bottle, refilling it with tap water, washing it well, and taking it along with me wherever I went. Our family tested lots of bottles before choosing this one. We wanted to be conservation conscious. After many chided us for using #7 bottles, our research began again. After cruising many plastics, medical, consumer, and environmental websites, I'm removing #7 plastic bottles from my life. Plastic household items have been with us for the last 60 years and are a product of the petrochemical industry. We need to remember that our need for oil isn't just for gasoline. Many petrochemical products have been invented in the last half century, including plastics, fertilizers, asphalt, and much more.

Bottled water is here to stay. It's a booming industry that grosses more than \$7 billion a year in the U.S. Water is necessary and maintaining hydration is essential to good health. But the bottle you drink from may be dangerous to your health. Our landfills are inundated with discarded plastic bottles. Bottled water you purchase is in #1 PET or PETE (polyethylene terephthalate), bottles which may leach DEHA, a known carcinogen, if used more than once. Polycarbonate water bottles, such as the Nalgene #7 bottles, contain bisphenol A (BPA), which leaches from the plastic even at room temperature and has been linked to chromosome damage and hormone disruption. When either type is refilled, there is a risk of potentially harmful bacteria that grow on saliva, food particles, or fecal material from unwashed hands. Washing bottles with hot water and detergent or rinsing them with bleach will sanitize them, but it also leaches harmful chemicals out of the plastic.



What to do? Use metal bottles. **Klean Kanteen** offers many sizes of stainless steel bottles. **Thermos** makes stainless steel bottles for both hot and cold drinks or soup. Wash these bottles and their tops with hot water by hand after use; dishwashers may not get into the narrow mouths of bottles to clean their interiors. Buy food products packaged in glass whenever possible. Use glass containers for storing leftovers. Never use plastic containers for heating in a microwave. Use glass baby bottles with silicone, not latex nipples. And don't reuse plastic water bottles.

[Sources: *Natural Health Newsletter*, published by Randall Neustaedter OMD, LAc, CCH, http://www.cure-guide.com/Natural_Health_Newsletter/Plastic_Bottles/plastic_bottles.html Cone, Maria, "Scientists issue warning on chemical," *Los Angeles Times*, Sept. 4, 2007.]

*Peggy Stewart, Pasadena Garden Club (CA) - Zone XII
Advisor, GCA Conservation Committee*

Want to Know What's Happening in Your State?

To find out how global warming is directly impacting the wildlife and environment in your state, go to the National Wildlife Federation website and click on your specific state to find out.

Here's the website: www.nwf.org/globalwarming/statefactsheets.cfm

You will find global warming fact sheets and suggestions of things to do in your area.

For example, "Warmer fall and winter temperatures in northern regions would make it unnecessary for waterfowl to fly south through **Pennsylvania** to find ice-free water and

suitable food, reducing hunting opportunities in the region.” Or, “The **Texas** Loan STAR Program, administered by the Texas Energy Conservation Office, provides financing for energy efficiency projects for state agencies, state universities, school districts and local governments.” Look up your state!
Editor

Climate Change Conferences Across the Country

New Jersey’s “Hotter Times Ahead”

In November of 2007, 360 garden club members, friends, college and high school students and concerned citizens met in Princeton, New Jersey for “Hotter Times Ahead”, a conference on climate change, sponsored by the 12 Zone IV clubs. A conclusion of the meeting was that climate change is not just an environmental issue; it is fundamentally a moral one. All attendees at the meeting received an eco-friendly reusable shopping bag, a printed handout called “Hot Tips for a Cooler Planet.,” and for those attending the evening’s dinner, a compact fluorescent light bulb in their wine glasses!

In the handout are instructions for how to: **Identify your carbon footprint.** Go to www.epa.gov/climate_change or www.liveneutral.org to get a broad gauge of how much carbon you and your family are responsible for. What kind of impact are you having on your environment?



Recycled materials and CFL’s adorn the conference arrangements.

Another interesting portion of the handout includes these websites for helpful information:

- Earth911.org:** a recycling, reuse, renewal resource, done by zip code
- Environmentaldefense.org:** site for finding practical environmental solutions
- Grist.org:** environmental news and commentary, including how to talk to a skeptic
- Ipcc.ch:** The latest Intergovernmental Panel report on climate change; add www. in front
- Sierraclub.org/sprawl:** promotes smart growth communities
- Shopgreen.pricegrabber.com:** smart shopping for green, sustainable living
- Stopglobalwarming.org:** information and action steps
- Treehugger.com:** compendium of many green guides and great information

To rid yourself of catalog clutter and reduce unsolicited commercial mail, go to these

websites:

www.dmachoic.org/onlineform.php and www.cataloguechoice.com

Getting rid of unwanted mail is where to start with reduce, reuse, and recycle.

For more global warming tips from the conference, contact Margaret Sieck at Seekwin@aol.com.

*Margaret Sieck, Author of "Hot Tips"
Conservation Co-Chair, G.C. of Princeton (NJ) - Zone IV*

[To read more about this conference, look for it in the *GCA Bulletin*, Feb.-March, 2008, pg. 11.]

Zone I Explores How Global Warming Affects New England Gardens

In October of 2007, Zone I Horticulture Rep Mary Liz Lewis and Conservation Rep Elise Wellington joined forces to provide a program for their respective club chairs. Those attending learned how gardeners in their area will be affected by climate change and how they can help reduce global warming. With almost all of their clubs represented, the attendees heard from Gwen Stauffer, Executive Director of the New England Wild Flower Society (which has just adopted a position on global warming). The issue of climate change is going to become about accessibility to water, Ms. Stauffer said. Future wars will be about water, not oil. But, there are measures we can take to address the problem. To reduce our carbon footprint, we must first stop being wasteful and we must recycle more. Leaf waste needs to be composted and used instead of bark mulch to retain moisture. Lawn should be reduced; groundcovers used more. If you have a lawn, get off the "Scott's addiction," Ms. Stauffer argued. Chemical fertilizers cause grass to grow faster, using up more water and requiring more frequent mowing by gas-consuming lawn mowers. Instead, she recommended a topcoat of compost and aeration every spring. If you must use a chemical fertilizer, use it only in the fall, one with high potassium content (for root growth). Plant trees, the lungs of the earth, as they absorb carbon dioxide and create oxygen. Get behind your land conservation organizations, which preserve trees. Maintain the habitat of a region by planting gardens with native plants as they hold the genetic code to best deal with climate change. Buy only locally grown plants and seeds. Ms. Stauffer warned that invasive plants will become more of a problem with global warming. While we think of global warming as a conservation issue, its impact on horticulture is the reason this topic is the perfect "glue" to bring those with different interests in our clubs together for a common goal.

*Elise Wellington, Worcester G.C. (MA)
Zone I Conservation/NAL Representative*

Chicago "Coolers" Host Second Global Warming Symposium

When determining how best to follow up on their first global warming symposium in April 2006, the Chicago Council of the GCA, which comprises the six clubs in the Chicago area, decided to view the serious environmental crisis from a new perspective.

Because many of us have a keen interest in the arts, the Chicago Council's global warming committee, dubbed "The Coolers," decided to look at the science of climate change by way of the arts. World-renowned artist David Buckland's Cape Farewell Project brings artists, scientists, and educators together on sailing expeditions to the High Arctic. *Time* magazine recently featured a picture of the rapidly changing Arctic as seen from a Cape Farewell voyage as among the best photographs of 2007. "The project endeavors, through the participation of

some of our finest creative minds . . . to create a sustainable global vision that involves all of us,” Buckland explained. At the Chicago Council’s Second Global Warming Symposium in November, 2007, Buckland’s still and video photography mesmerized a diverse audience. “It is through our partnerships with organizations like the GCA that we hope to manifest this climate of change and give people this vision of optimism and excitement that embraces the future . . . ,” Buckland said.

Buckland combined the scientific data gleaned a mere three weeks earlier with a stunning photographic record of what the crew on their sailing vessel faced on their latest expedition. The situation in the Arctic appears to be more dire than earlier estimates had predicted, according to Buckland. With sea ice melting faster, the Arctic ecosystem is growing more and more unstable, making the need to reduce greenhouse gas emissions quickly even more vital.



Greenland, Oct., 2007 – End of Ice

Buckland’s compelling presentation made a clear connection between the melting of sea ice in the High Arctic and the volatility of weather around the world. He explained how the forces being unleashed because of our continued emissions of greenhouse gases will become unmanageable: “Although scientists have done a brilliant job in highlighting the causes of climate change, the ultimate responsibility rests with all of us and the way we choose to live our lives. Over the past 150 years, we have become dependent on a carbon economy . . . it is now clearly apparent that this is not sustainable without serious damage to the planet and, subsequently, human existence.” Observing the fury of nature in the Arctic made Buckland more convinced than ever of the danger of a heating planet. However, in the absence of a single, easy solution, the warnings of scientists and the sound bites of politicians risk being

ignored by the public. Buckland's genius lies in using art to drive home the message that our sublimely beautiful and ineffably complex planet requires the collective actions of all.

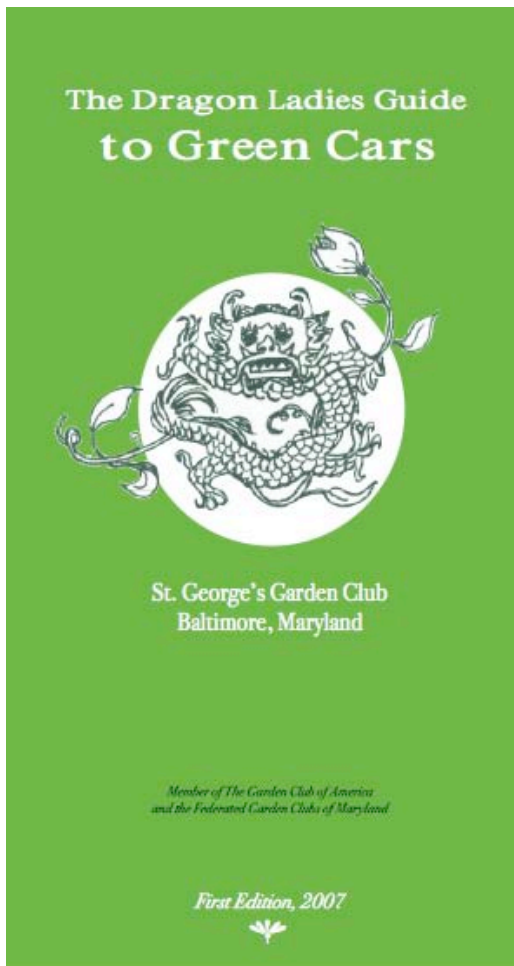
*Suzanne Booker-Canfield, Ph.D.
President, Garden Guild of Winnetka (IL) - Zone XI
Member, Chicago Council Global Warming Committee*

[To read more about this conference, look for it in the *GCA Bulletin*, Feb.-March, 2008, pg. 10.]

What Can Clubs Do?

Here are a few examples of what our clubs are doing to give you inspiration.

Dragon Ladies Guide to Green Cars



St. George's Garden Club (Maryland) Conservation Committee Co-Chairs Jenny Horton and Stephanie Wilson were searching for a novel conservation project that would include and intrigue the rest of their club. Both drove fairly new hybrid cars and were often asked about them. It occurred to them that most of their garden club friends bought new vehicles every 3-4 years and wanted information about what made one car better, environmentally, than another of the same class. They decided to produce a "Zagat" style booklet to advise others about cars, SUV's, minivans and station wagons – vehicles that most women drive. The Conservation Committee went out into the real world of auto dealers to kick tires, drive around the block, and carefully examine the storage spaces of the best models, from coffee holders to space for rhododendrons in the trunk. Other criteria were horsepower, acceleration, braking, safety, and style. From the Mini Cooper to the Ford Escape, models were chosen for factors that included friendliness to the environment. This tongue-in-cheek booklet, illustrated by St. George's "dragon lady" Ellen Sullivan, and written by Jenny and Stephanie, is packed with information about what makes a vehicle desirable. Whether buying for yourself, your child, or your husband, this handy booklet is a valuable introduction to Green Cars! To obtain a copy (\$10

each + postage), please contact Stephanie Wilson at sewbeeps@comcast.net.

*Tolly Lewin, President
St. George's Garden Club (MD), Zone VI*

Zone II Club Focuses on Global Warming Projects

The Garden Club of Hartford's (Connecticut) Conservation Committee launched its "Global Warming: Who? Me?" campaign last year. We wrote a monthly column, "Conservation Clippings," in our club newsletter in which we address issues such as ways to reduce catalog mailings, replacing old light bulbs with CFL's, and the benefits of reusable shopping bags that the committee distributes directly to club members. Bottled water and phantom load are topics we are discussing in the column as well. At our recent Holiday Auction fundraiser, the Committee contributed a "Green Basket" filled with "green" household products. Another auction item was the delivery and planting of a native tree to help reduce carbon dioxide and promote native plantings. Funds raised from that event will support a new garden installation at a nearby art museum. In June of 2008, at our club's in-house flower show, we will be contributing an exhibit designed to visually educate viewers on what can be done about global warming. The display will include methods and products we have been promoting to our membership. Garden clubs can indeed find many ways to help reduce global warming.

*Margah Lips and Marion Kellner, Conservation Committee Co-Chairs
Garden Club of Hartford (CT) - Zone II*

[Note: **Phantom load**, sometimes referred to as standby power or leaking electricity, is the power consumed by any device while it is switched off.]

Hot Flashes

In October of 2007, the Garden Club of Honolulu (Hawaii) held a conservation meeting for their members called "Hot Flashes." Members were greeted by a display of chili peppers and CFL bulbs and eco-friendly household items that were then sold. Table centerpieces held endangered native Hawaiian plants.

Jeffrey Mikulina, Director of the Sierra Club Hawaii, an environmentalist and advocate for sustainable Hawaii, spoke about the climate crisis that faces their state. The impact human consumption of fossil fuels has on the globe, and specifically on Hawaii in the coming century, was the focus of his address. Here's what members learned. On average, each person in Hawaii, including residents and tourists, adds four pounds of greenhouse gases to the atmosphere every hour of every day - a gallon jar full of carbon (coal) Jeff carries, vividly illustrating this fact. The impact of this on Hawaii will be droughts, flooding, beach erosion, warmer ocean temperatures, coral bleaching and a loss of ocean life. A slide of what Honolulu and Waikiki *could* resemble, with a predicted ocean rise of 39" by the end of the century, looked like Venice. White sand beaches would be a thing of the past, the city and a large part of the residential and metro area would be flooded.



Club members prepare their display table of sale items.

Before overwhelming us with a grim view of the future, we were reminded that with this new knowledge comes a moral obligation to aggressively reduce our carbon emissions and save our

planet. Hawaii has taken major strides by adopting the Global Warming Solutions Act in 2007 - only the second State in the union to do so - and by initiating the Hawaii Sustainability 2050 Plan. The presentation also offered many practical suggestions about what Hawaii's citizens can do to stem the rising tide. If your club is interested in a similar presentation in your area, go to <http://www.theclimateproject.org>. [Note: The Climate Project provides speakers nationwide to disseminate information shown in "The Inconvenient Truth."]

Heidi Ho Conjugacion
Vice-Pres., G.C. of Honolulu (HI) - Zone XII

"Conservation Conversations" Spread the Word

A monthly column in the Kenilworth (Illinois) Garden Club Newsletter is called "*Conservation Conversations*". This is a valuable tool for communication to the entire garden club. Many of the *Conversations* deal with practical solutions to the problems presented by global warming. Here's an excerpt from the club's newsletter:

Green, Greener, Greenest!

According to Universal Press Syndicate's Claire Whitcomb, "It's a brave green world out there."

Here are tips to green up your personal world:

1. Turn off the tap as you brush your teeth and save 5 gallons of water a day, 35 gallons a week. Multiply this by number of family members at home.
2. Support community sponsored agriculture. The average American-grown tomato may travel up to 1,500 miles from vine to salad bowl. Farmers see only a small fraction of every dollar spent while the rest is paid to middlemen in the food chain. The food shipping industry contributes significantly to air pollution.
3. Give a potted plant as a gift rather than a bouquet of flowers. Your bouquet was probably grown in a greenhouse thousands of miles away. In Columbia, the flower industry uses serious amounts of polluting pesticides that expose workers to carcinogenic and/or toxic chemicals. Potted plants are most likely grown in a nearby nursery, and will last far longer.

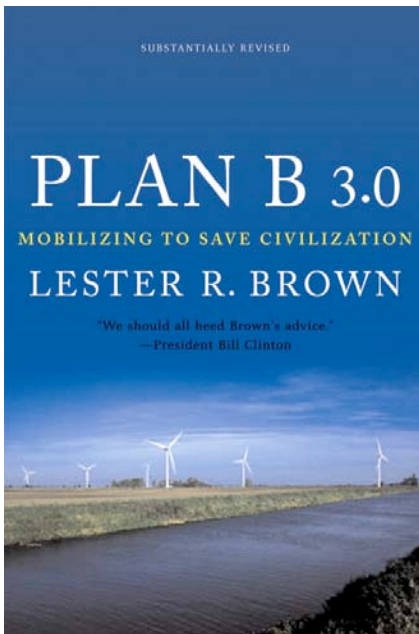
Try including some "helpful hints" in your club's newsletter!

Kitty Kirby, Kenilworth Garden Club (IL)
Zone XI Director

Climate Change Book Reviews

Plan B 3.0 by Lester Brown

PLAN B 3.0 is a comprehensive look at climate change, the world wide scope of these changes and the "war-time speed response" required if we are to keep these changes from becoming irreversible. As an eco-economist who heads the Earth Policy Institute in Washington, D.C., Lester Brown wrote **PLAN B 3.0** as an update to *PLAN B 2.0* (2006) and *PLAN B* (2003). At the end of last summer (2007) a much earlier than anticipated event "stunned" scientists - an area of Arctic sea-ice almost twice the size of Britain disappeared in a single week. This event, among others, propelled the author to write this just published sequel; the difference between the subtitles for the 2006 publication ["Rescuing a Planet Under Stress and a Civilization in



Trouble”] and the 2008 version [“Mobilizing to Save Civilization”] clearly indicates Brown’s sense of urgency. **PLAN B 3.0** focuses on four conservation goals: stabilizing climate change, stabilizing population, eradicating poverty and restoring damaged eco-systems. And it details solutions for which we already have the technology. So that the market might reflect the actual costs of climate change, Brown proposes levying a carbon tax that would be offset with a matching reduction in income taxes. The Earth Policy Institute website, in its overview of Brown’s book, states: “The goals laid out in **PLAN B 3.0** for developing renewable sources of energy by 2020 are based not on what is conventionally believed to be politically feasible but on what we think is needed to prevent irreversible climate change. This is not Plan A – business as usual. This is Plan B - an all-out response proportionate to the threat global warming presents to our future.” This is a must read! Although the new book retails for \$16.95 paperback and \$30 for hardbound, it is

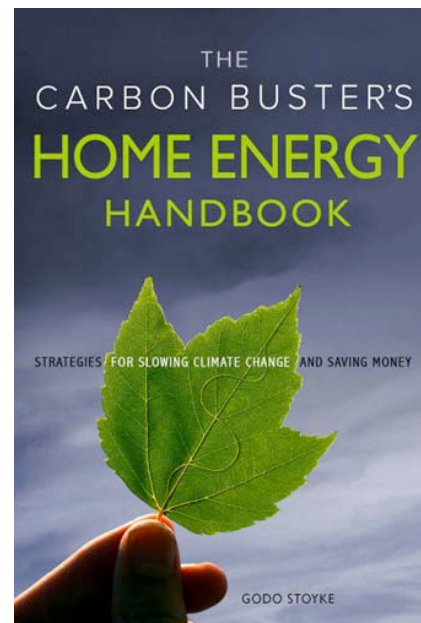
available free of charge in PDF form on the Earth Policy Institute website. [Go to www.earth-policy.org. Click on “Books” (see side column at upper left of page), select “Plan B 3.0,” and then select “Table of Contents” where you will find the downloadable PDF files.]

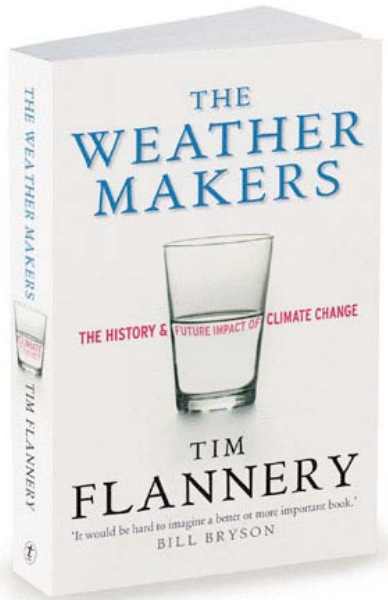
*Colles Larkin, St. Paul Garden Club (MN)
Zone XI Conservation/NAL Representative*

The Carbon Buster’s Home Energy Handbook by Gogo Stoyke

Environmental problems such as climate change can be easily avoided, at a profit, through the intelligent application of appropriate technology. With this paperback, learn strategies with an average annual return of 32% while lowering your carbon emissions far below the levels targeted under the Kyoto Protocol! This is a good resource for people who are really serious about reducing their carbon footprint and saving money – lots of it – in the long run.

*Penny Thomas, G.C. of Princeton (NJ) – Zone IV
GCA NAL Committee
Vice-Chair – Climate Change*





The Weather Makers: How Man is Changing the Climate and What it Means for Life on Earth by Tim Flannery.

Australian biologist Tim Flannery was once skeptical of theories of global warming. In this book he looks at the history of the Earth's weather to help describe its future – and he doesn't paint a very pretty picture. "As greenhouse gas levels rise," Flannery warns, "the Earth is nearing a 'global climatic tipping point,' in which swaths of animal species will be lost to extinction." Flannery writes that climate change has shaped evolution and fluctuations in weather are becoming more extreme. While serving as a warning signal, the book also has a practical side, offering readers guidance for the future.

Editor

Climate Change Quote:

"The planet should not be used as a warehouse of resources to serve humanity's selfishness."

Dr. Rowan Williams, Archbishop of Canterbury in his 2007 Christmas address

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Conservation Watch, a publication of The Garden Club of America, is produced by the GCA Conservation Committee. We hope you like the new format. Readers' ideas, contributions, and suggestions are needed and welcome. Letters to the Editor may be e-mailed, faxed, or mailed to the Editor and will be published as space permits.

Elva Busch, Editor