Conservation Watch

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Tiny Historical Packages: Heirloom and Landrace Seed Preservation

Heirloom Seeds

When I was growing up my father would order 'Dr. Martin' Pole Lima Beans from a man in New Jersey to plant in our vegetable garden along with all the other vegetable seeds that he ordered from Burpee's Catalogue. Burpee did not sell Dr. Martin and for southeast Pennsylvania, Dr. Martin's were considered the premier choice of lima beans for the connoisseur! Even today they can only be ordered occasionally from Seed Savers Exchange or the Landis Valley Museum.

'Dr. Martin' is an example of an heirloom seed that is not available commercially but is preserved by growers and handed personally from one generation to another or one grower to another. According to Wikipedia, an heirloom is "a cultivar (a cultivated variety) that was grown during earlier periods in human history, but which is not used in modern large-scale agriculture. Many heirloom vegetables have kept their traits through open pollination." Heirlooms are plants that have passed from one gardener to another without hybridization or large-scale farming.



Many varieties of heirloom tomatoes.

Seed Savers Exchange (<u>www.seedsavers.org</u>) is the largest organization that works to preserve heirloom seeds in the United States. Members have passed on approximately one million

samples of rare garden seeds to other gardeners. When you join Seed Savers Exchange, you receive a huge catalogue of seeds that are available to members, donated by other members. Seed Savers Yearbook makes available to its members the seeds of more than 11,000 rare varieties of vegetables, fruits and grains. In other words, each year nearly twice as many vegetable varieties are available to SSE members than from all of the mail-order seed catalogs in both the U.S. and Canada (per SSE website).



Heirloom seed packets.

Garden club members should be encouraged to participate in this ancient practice of saving and sharing special seeds that grow in their gardens. It is a rewarding experience to gather seeds from a plant you love and share them with others. There are many websites and books available on the techniques of gathering, drying and preserving seed and the techniques are easy and rewarding. As SSE says, "When people grow and save seeds, they join an ancient tradition as stewards, nurturing our diverse, fragile, genetic and cultural exchange."

Some good websites are:

US Forest Service website on collecting and preserving seed: http://www.fs.fed.us/wildflowers/nativeplantmaterials/collecting.shtml

The Seed Site: http://theseedsite.co.uk

This British website on collecting and preserving seed has lots of hands on, home-style methods.

Landrace Seeds

Landrace seeds are historically cultivated varieties that are often highly variable in appearance, are genetically diverse but are identifiable morphologically and have a genetic integrity. Indicating their geographic heritage and economic important, landraces usually have local names. A landrace has particular properties such as early or late maturation. Each has a reputation for adaptation to particular soil types. "All components of the population are adapted to local climatic conditions, cultural practices, and disease and pests." (Wikipedia)

By the 1920's it was recognized that landraces were worth preserving because of their unique qualities. These specific characteristics could be used to improve modern agricultural hybrids. Researchers still work diligently to locate, collect and save landraces from remote farming communities throughout the world.

Native Plant Restoration

For many native species, restoration efforts are only possible through the collection of wildland seed. Many times, site-specific material must be harvested and propagated. For large restoration projects, there is simply not enough commercially available seed for replantings, such as in badly eroded or burned areas. Projects are most successful when seed can be located and collected from a nearby area so that the genetic types are compatible. The Plant Conservation Alliance's program, Seeds of Success, is a government-sponsored program to

increase the availability of native seed to rehabilitate and restore lands in the United States. It is a division of the Bureau of Land Management. In the past six years almost 3000 collections have been made of over 2000 native species. See:

http://www.nps.gov/plants/sos/index.htm

Seed Repositories

Many countries have set up seed banks over the last century. The United States stores seed at the National Center for Genetic Resource Preservation in Fort Collins, CO. Seeds have been introduced



from around the world for over 100 years. When this collection was started, little was known about the conditions needed to preserve seed and other germplasm so that it would retain its ability to germinate and grow. Since 1946 the USDA has maintained various locations in a scientific manner. The Fort Collins facility is a long-term seed storage facility that acts as a back up for seed that is used in the working collections.

Take a look at: http://www.ars.usda.gov/main/site main.htm?modecode=54-02-05-0

[germplasm – the part of a germ cell that carries hereditary factors, the generic material.

Oxford English Dictionary.]

Susie Wilmerding, G.C. of Philadelphia (PA) GCA Conservation Committee, Vice-Chair — Agriculture

Further information on these topics and a list of seed sources will be in Issue No. 12, Spring 2009 of **The Real Dirt** (GCA on-line horticulture publication). Special thanks to Diana Fish, Editor of *The Real Dirt* for her assistance with this article.

Agriculture and the Future of Our World Food Supply

The challenge of feeding the world will grow in coming years as global food supplies are squeezed by the increasing world population, the expanding economies in China and India, and the increased use of crops for energy. Scientists estimate that farmers may need to double food production by 2050 to feed a world population that is expected to exceed 9 billion. Meanwhile, biofuels are making new demands for corn, soybeans, and other crops.

Another issue less often addressed is the relationship between food production and the effects of climate change. In the January 2009 issue of *Science Magazine*, authors David Battisti and Rosamond Naylor state that unless farmers make a concerted effort to adapt to climate shift, the change is likely to leave half the world's population vulnerable to massive food shortages. These authors conclude that by 2100, there is a 90% chance growing-season temperatures in the tropics and subtropics will be warmer than any conditions recorded over the last century. "The stresses on global food production from rising temperatures alone are going to be huge and that doesn't take into account water supplies stressed by the higher temperatures," said Battisti. The analysis is based on temperature projections from 23 global climate models and

reports detailing how recent heat waves have affected food supplies in different parts of the world.

Our present ways of agriculture are not sustainable; therefore, neither is our food supply. How and when do we restore ecological health to our agricultural landscapes and also make necessary changes in the production and marketing of food to keep pace with the rapidly changing world and potential climate changes? The five-year Farm Bill recently enacted by the U.S. Congress only begins to address the food supply future. A diverse group including farmers, conservationists, and agribusinessmen, is currently working together in an effort to help farmers find better ways to measure their impact on natural resources and improve sustainability. The goal is for the world to be fed and the land to be preserved at the same time.

The future of food is a political issue that transcends our current farm policies. A recent New York Times editorial suggested that we need a national agricultural policy that is based on ecological principles. A 50-year Farm Bill is one way to approach this challenge. Such a bill would address forthrightly the problems of soil loss and degradation, toxic pollution, fossil-fuel dependency, and the destruction of rural communities. The editorial concludes, "It is an issue as close to every one of us as our own stomachs."

Nancy McKlveen - Des Moines (IA) Founders G.C. - Zone XI GCA NAL Committee, Vice-Chair - Agriculture

[Sources:

Holden, Constance, "Climate Change: Higher Temperatures Seen Reducing Global Harvests," Science Magazine, Jan. 9, 2009, pg. 240.

Battisti, David, Professor of Atmospheric Sciences, University of Washington.

Naylor, Rosamond, Ass. Professor of Economics, Stanford University. Jackson, Wes and Berry, Wendell, Editorial, *The NY Times*, Jan. 5, 2009.]

Biodynamic Agriculture and the Greening of Wine Making

Who would have thought that going to a wine tasting event would lead to learning a new vocabulary relating to agriculture terms? Sustainable. Organic. Multi-crop. Diversified. Add "biodynamic" to the list. There is a new trend in the winemaking industry – it's going "green" in a big way. To date, there are 380+ biodynamic wine producers worldwide.



Benzinger's biodynamic vineyard in Sonoma, California.

Biodynamic agriculture conceives of the farm as an organism, a self-contained entity with its own individuality. Emphasis is placed on the integration of crops and livestock, recycling of nutrients, maintenance of the soil, and the health and well being of the crops and animals. The farmer, too, is part of the whole. Cover crops, green manures, and crop rotations are used extensively. The development of this theory has its origins in Germany in the 1920's after farmers noticed degraded soil conditions and a deterioration in the health and quality of crops and livestock resulting from the use of chemical fertilizers. They then tested their new biodynamic methods on their farms to improve the health of their plants and animals. These ideas next spread to Australia from Europe, and eventually to the U.S., where we now have a Biodynamic Farming and Gardening Association.

Some wineries in the U.S. are engaging in biodynamic agriculture. Their techniques for wine making go beyond the principles of organic farming, taking into account celestial influences determining when to plant and harvest, the role of insects, using native yeasts for fermentation, and leaving their wines unfiltered and unfined (not clarifying the wine by removing tannins and proteins). These winemakers are eliminating pesticides, synthetic sprays, and chemical additives from their winemaking process. Biodynamic farming and gardening combines common-sense agriculture, an understanding of ecology, and knowing the specific environment of a given place. It may be the wave of the future.

Elva Busch, Santa Fe (NM) G.C. - Zone XII GCA Conservation Committee, Conservation Watch Editor

Coming Attractions!

An upcoming issue of *Conservation Watch* will continue our agriculture discussion with an article about Genetically Modified Organisms (GMO's). Watch for it!

Plastics in the Kitchen - What You Need to Know

Just the facts (from the U.S. Environmental Protection Agency):

- In 2007, the United States generated almost 14 million tons of plastics in the municipal solid waste (MSW) stream as containers and packaging, almost 7 million tons as nondurable goods, and about 10 million tons as durable goods.
- The total amount of plastics in waste almost 31 million tons represented 12.1 percent of the total MSW generation in 2007.
- The amount of plastics generation in our waste has increased from less than 1 percent in 1960 to 12.1 percent in 2007.
- Plastics are a rapidly growing segment of the waste stream. The largest category of plastics are found in containers and packaging (soft drink bottles, lids, shampoo bottles), but they also are found in durable (appliances, furniture) and nondurable goods (diapers, trash bags, cups and utensils, medical devices).
- Plastics also are found in automobiles, but recycling of these materials is counted separately from the MSW recycling rate.

Plastic water bottles

The best answer to plastic water bottles is to avoid them for many reasons, but if you can't, here is a primer:

What to buy: (Look for the numbers on the bottom of the containers.)

- #2 HDPE High-density polyethylene (as in milk jugs)
- #4 LDPE Low-density polyethylene
- #5 PP Polypropylene (as in long underwear)

#2, #4, and #5 are your best choices. They transmit no known chemicals to food and #2 is commonly accepted by recycling facilities. In some areas you may be able to recycle #4 and #5.



#I PET Polyethylene terephthalate (soda bottles). These are fine for single use and commonly accepted by recycling facilities. Why not reuse them? They are hard to clean because the plastic is porous so bacteria and flavors are hard to eliminate.

Plastics to avoid:

- #6 Polystyrene, a chemical used in Styrofoam and clear plastic takeout containers, can leach styrene, a possible human carcinogen. It can damage the brain and nervous system.
- #7 Other, usually polycarbonate, the only plastic made with bisphenol A. Polycarbonate is used in baby bottles, 5-gallon water-cooler bottles and the epoxy linings of tin food cans. Bisphenol A has been linked to a wide variety of problems such as heart disease and obesity, but may be in other types of nonrecylable plastic.

Other things to know:

- Don't store fatty foods such as cheese and meat in plastic wrap or plastic containers.
- Wash plastic containers gently, by hand. If scratched, bacteria may find a hospitable home.
- Please don't use plastic containers in the microwave. They could leach chemicals into your food.

Tina Freeman, New Orleans Town Gardeners (LA) - Zone IX GCA Conservation Committee, Vice-Chair — Air Quality/Toxic Substances

Taking Litter Seriously

Signs are hopeful that the recycle habit is catching on. Reusable shopping bags are slowly becoming common and recycle bins are showing up everywhere. Even in the U. S Capitol, there is a move towards biodegradable chemicals, but there are still many products that are very harmful to the environment. This chart shows how long some of our everyday products are around.

Rate of Biodegradation

Product Time it takes Cotton rags 1-5 months 2-5 months Paper Rope 3-14 months Orange peels 6 months Wool socks 1-5 years Cigarette butts 1-12 years Plastic coated paper cartons 5 years Plastic bags 10-20 years Leather shoes 25-40 years Nylon fabric 30-40 years 50-100 years Tin cans 80-100 years Aluminum cans Plastic 6-pack holder rings 450 years Glass bottles 1 million years Plastic bottles Never

[Source: http://www.worldwise.com/biodegradable.html]

Kathy Gillespie, Pasadena (CA) G.C. - Zone XII GCA Conservation Committee, Vice-Chair — Forests/Redwoods

Plastic Bags - Here Forever!

Plastic bags were introduced twenty-five years ago. If we only knew then what we know now! The bags currently in our system of consumption are here to stay. Each year 500 billion to I trillion plastic bags are used worldwide. These bags enter our waterways as wind-blown litter and pollution. They take up volumes in our landfills. Plastic bags do not biodegrade, but slowly photo-degrade, a process by which sunlight breaks them down into smaller and smaller pieces of plastic. These single-use high-density polyethylene (HDPE) bags will accumulate and remain on our planet for up to a thousand years!

The numbers paint a dismal picture. Four out of five grocery bags in the U.S. are plastic. The average family accumulates 60 plastic bags in only 4 trips to the grocery store. The Wall Street Journal reports the U.S. uses 100 billion plastic bags annually. It is estimated that 12 million barrels of oil are needed to produce those bags.

California provides an illustration of the scope of the problem. In San Francisco alone, an estimated 180 million grocery bags were used in 2006, with less than 1% being recycled. That means 99% or more than 178 million bags ended up polluting our landfills, waterways, and parks. City officials estimate that \$8.5 million is spent annually dealing with plastic bag litter – equating to roughly 17 cents for every bag used. When we broaden the picture to the entire state of California, 400-600 bags per second are being discarded. While these bags are handed out freely at retailers, they are not "free." The state spends \$25 million annually to accommodate

discarded plastic bags in landfills. Public agencies spend more than \$300 million annually in California in litter cleanup. Recyclers spend time and money manually removing plastic bags from other recyclables, as well as extracting them from jammed machinery.



Consider where plastic bags end up. In the Pacific Ocean, a large mass of plastics, bags, bottles, and marine debris has collected. It has been called the Great Pacific Garbage Patch. This enormous stew of trash weighed in at 3.5 million tons in 2007. Sadly, this floating pile of trash, now twice the size of the state of Texas, has increased tenfold in size since 1950, and is expected to double in size in the next 10 years. Eighty percent of the

ocean's trash originated on land. We can prevent the Great Pacific Garbage Patch from expanding by curbing our use of plastic at home.

The results of human insensitivity don't just affect land mammals. At least 267 species have been adversely affected by plastic debris. It kills over 100,000 marine mammals and turtles each year. Plastic bags are considered especially dangerous to sea turtles, who mistake them for jellyfish, a primary food source. It is estimated that 86% of all known species of sea turtles have had problems related to entanglement or ingestion of marine debris. Plastic products that enter our marine environment eventually break down into small fragments, which in some areas of the ocean outweigh plankton by a factor of six and are irreversibly altering the marine ecosystem.

What can we do? Your actions count! Reduce the mindless consumption of single-use plastic bags, one trip to the market at a time!

- 1) Say "No, thank you!" to a store's offer of "paper or plastic." Bring your own reusable bags, or hand carry your items out of the store.
- 2) Encourage local retailers to discontinue their use of plastic bags and paper bags. Suggest they use bags from recycled products and offer reusable bags for sale at the register.
- 3) Use the form letters on http://www.reusablebags.com/action.php to email retailers and politicians to voice your concerns. The form letters on this website will help persuade your favorite stores to offer bag credits for bringing your own bag. Convince your government officials to implement a plastic bag consumption tax in your area.

Your actions count!

Unrealistic? Consider that early in 2008, in an unexpected move, China banned the use of plastic bags by June of that year by all shops, from small to large supermarkets. Experts calculate China uses 37 million barrels of crude oil each year producing plastic bags. In June of 2008, Los Angeles has followed suit with a new policy which will be effective July, 2010. This policy bans plastic bags from supermarkets and charges those consumers who request plastic bags 25 cents per bag, which will make a dent in the 2.3 billion plastic bags used in L.A. every year.

The Hillsborough Garden Club is jumping onto the bandwagon of the plastic bag ban. Members of the club's Conservation Committee are contacting Sustainable San Mateo, an organization that promotes sustainability at the county level, to explore proposing a plastic bag ban in the county. Using the parameters of the groundbreaking ordinance passed in San Francisco in 2007, the HGC will focus on corporations - typically grocery chains and pharmacies with annual revenues in excess of \$2 million. San Francisco's success means at least 5 million fewer bags are

being used in that city. San Mateo County could possibly eliminate 4.7 million plastic bags with this ban. With only 5% of bags recycled statewide, a ban would make a big difference in the proliferation of one invasive species - the national plastic bag flower, sprouting everywhere!

Elizabeth Jackson and Libby Hulsey, Conservation Committee Co-Chairs Hillsborough (CA) G.C. - Zone XII

Club News

Club Produces Helpful Green Resource Book

While preparing for a Green Dinner fundraiser in September, 2008, the Conservation Committee of the Chestnut Hill (MA) Garden Club decided to develop a Green Resource Book.



This book provides members with ways to live more sustainably and buy locally and organically by helping them find vendors for such products. While there is a lot of material on green items these days, not much is targeted to a specific geographic location. Where are the local bakeries, the local coffee roaster, the local pasta sauce maker and the local pickle guy who produce the kinds of items we now wish to buy? The Chestnut Hill Garden Club Resource Book fills that need.

The food section of the Green Resource Book lists many local vendors, farms and farmers' markets. The resource guide also includes sections on organic fabrics, earth-friendly wallpaper, organic lawn care, as well as organic flower delivery services. The Conservation Committee hopes that this guide will change buying habits of club members. The group will continue to upgrade their resource book as more vendors and information becomes available.

The Green Resource Book was distributed at the Green Dinner in a Chestnut Hill Garden Club reusable shopping bag, along with items donated by some of the green vendors.

Lamia Moukheiber, Conservation Committee Member Chestnut Hill (MA) G.C. – Zone I

"Dump" or "Landfill" A Challenge from the French Broad River Garden Club

What is in a word? When it comes to the final resting place for your garbage, do you say "dump" or "landfill"? Your word choice may unintentionally reveal much about your attitude and behavior. The French Broad River Garden Club conservation committee members learned it did theirs. Determined to be informed and proactive about recycling and protecting the environment, the garden club took an educational field trip to their Buncombe County Landfill in Asheville, North Carolina. Our county, fortunately, has a state of the art - or rather state of necessity - solid waste disposal facility.

Yet, when confronted with the mountain of old refrigerators and lawn mowers (already stripped down to remove what was recyclable), our normally gregarious group stopped talking and just stared. As the landfill's trucks and bulldozers crisscrossed the horizon, covering our obsolete consumables with earth, we stood mute. We could no longer just shut our eyes and pretend

another "inconvenient truth" did not exist. We had met the enemy and she was us.

Fortunately, our landfill field trip was more than just alarming. It was also technical, practical and hopeful. It is not too late to better utilize the landfill we have. For example, many club members have committed to the use of canvas grocery bags and reusable water bottles rather than the "use once and throw away" plastic that lives forever in the landfill.



Imagine the difference if our entire GCA membership made the same commitment! Are you faced with a similar dilemma and opportunity? If you have not yet done so, the *French Broads*, as we call ourselves, challenge you to visit and learn from your own landfill.

This is one of the monthly activities that the French Broad River club does for conservation. The group has adopted the motto, "Education, Inspiration, Action." The club activities run the gamut: noted climate change speakers, a "Green" Tea party, putting green tips in delegate bags at the last GCA Annual Meeting, and turning down the temperature in their meeting place, are among the many projects our very active club engages in.

Dianne Tuttle, Conservation Committee Member The French Broad River G.C. (NC) - Zone VII

Goats Help Remove Invasives in Partners for Plants Project

Last fall members of the Seattle Garden Club and a local Boy Scout Troup joined professionals from the Seattle Parks and Army Corps of Engineers in partnership to remove invasive plants from East Montlake Park and along the Lake Washington Ship Canal. These areas had become overrun with invasive ivy, blackberry and clematis. Aided by funds from the **GCA Partners for Plants** program, the garden club hired a herd of goats for three days to help with the project.

What a fun, environmentally sensitive way to eliminate invasives from a difficult site! The goats were delightful as they cleared the area and made our work so much easier. They actually **liked** eating ivy, blackberries, and clematis! The rain held off; the goats don't eat when it is raining. The SGC members cut and pulled down overhead clematis the goats couldn't reach. Seattle Park personnel provided tools. The volunteers found new methods for getting the job done while sharing gardening tips as they worked. The group's plan of attack was to cut down,



chop, let the goats eat the plants, top the area with recycled cardboard (covering half an acre) and then dumping wood chips supplied by the City of Seattle to cover the cardboard 4"– 6" deep.

It was fun for the garden club members to cut the overhead clematis and rip it down while the goats munched everything green up to five feet high. They followed the volunteers around as they cut and pulled – eating every leaf in sight! When the goats departed, invasives that were

10' high were reduced to a rubble of canes. The members did have to shoo the goats away from eating plants that they didn't want destroyed; goats can't tell the difference between desired and invasive plants! The goats were grazing right up to the time they were loaded up to leave the area. The garden club members, scouts, and friends were sad to see the goats go - they were great partners in this Partners for Plants project!

Sue Blethen, Conservation Committee Chair Seattle (WA) Garden Club— Zone XII

Bedford Garden Club Sponsors Environmental Summit

"Go out on a limb, that's where the fruit is." - Will Rodgers

The Bedford Garden Club joined forces with Bedford, New York's Energy Advisory Panel to hold an Environmental Summit on January 31, 2009. Our goal was to educate the public about the most pressing environmental issues of the day, to motivate attendees to take action as individuals, and, as community organizations, to address these problems on a local level. There were 28 lectures or workshops; 85 speakers, an exposition with 78 tables of displays, and a *locavore* lunch to experience first hand what a sustainable food system would look like. Our inspiration was both the GCA clubs of New Jersey "Hotter Times Ahead" conference in November of 2007 and Barbara Shea's work on the GCA Casey Tree Project.

The Summit was a huge success. The time for this was ripe - people have an urgent need to learn what they can do about the environment. Over 1000 people registered on a website created by club member Varner Redmon. The event was sold out; many had to be turned away. The impressive speakers included Bob Woodruff of ABC News, Tom Lovejoy, Carl Safina, Majora Carter, Jonathan Rose, Robert F. Kennedy Jr., and Chevy Chase. Organizations that participated included the Natural Resources Defense Council, the Environmental Defense Fund, and The Nature Conservancy. We included local, county, state, and federal government officials, as well as leaders from other towns who reported on their successful programs. The topics ranged from oceans and fish, oil depletion, biodiversity, health and safety of food and water supplies, waste and recycling, ethics and the environment, Bedford's own climate action plan, composting, school and community gardens, home farming, and supporting local agriculture, to name a few.

Community involvement was key. We had over 100 local partners - schools, civic organizations and businesses who assisted in the planning and supported the Summit by getting the word out, participating in workshops or the expo, volunteering, or providing funding. The Rusticus Garden Club was also very involved in the Summit, helping with planning and providing a major donation.



BGC members Allison Bamford and Lindsay Matthews selling Summit t-shirts and raffle tickets, raising \$4000 to defray costs and provide seed money for projects coming from the Summit.

The Summit was an extraordinary grassroots movement to change behavior on environmental issues - greenhouse gas emissions, climate change, diminishing natural resources, and the health and safety of our food and water supplies. We would be delighted to share our experience with GCA clubs across the country. (Contact Ellen Conrad at ellenconrad@hotmail.com.) We believe the Bedford Environmental Summit is a replicable model for a national movement to advance action on the environment. The Garden Club of America has always taken a leadership role in environmental issues. We can look to the Victory Garden and canning movement during World War II as a model for our efforts for the environment.

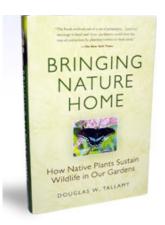
Ellen Conrad, President, Bedford (NY) G.C. - Zone III Co-Chair, Bedford Environmental Summit

[A locavore is someone who eats food grown or produced locally.]

Media Reviews

Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens

by Douglas Tallamy. Ph.D.



Dr. Tallamy has written about the relationship between insects and our native plant genera and their influence on the health and sustainability of our environment in his marvelous book.

Did you know that our native insects have evolved to eat only certain native species? This symbiotic relationship proved beneficial until humans began to manipulate the land to our use on a large scale. Urban sprawl is one of the most blatant examples; isolating native populations and spreading the use of non-native species across broad expanses has disrupted the system.

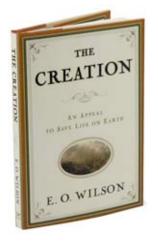
The insect population supports other predatory insects and the small mammals and birds that thrive in an area. By altering the native forest and meadow and by planting non-native species, we have disrupted the course of nature. Without the insect population, our ecosystem collapses. By restoring our native flora we begin to restore the insect population and, we hope, rebalance our environment. Dr. Tallamy includes charts of native species and their benefits for the northeast and the southeast, but the message he brings us applies to the entire world.

The author tells us, "Most of the native plant-eaters are not able to eat alien plants, and we are replacing native plants with alien species at an alarming rate, especially in the suburban gardens on which our wildlife increasingly depend."

Suzanne Roth, G.C. of Philadelphia (PA) GCA Conservation/NAL Zone V Representative Sophie Glovier, G.C. of Princeton (NJ) GCA Conservation/NAL Zone IV Representative

The Creation: An Appeal to Save Life on Earth by E. O. Wilson

Do you believe in Intelligent Design or in Darwinism? In *The Creation*, E. O. Wilson, one of the world's leading biologists, writes to a Southern Baptist pastor to make a passionate plea for help in saving the natural world. "The Creation, whether you believe it was placed on this planet by a simple act of God or accept scientific evidence that it evolved autonomously during billions of years, is the greatest heritage, other than the reasoning mind itself, ever provided to humanity." Living Nature is in deep trouble because of rapidly declining biodiversity. Evolution means species go extinct and new ones are born. Unfortunately, since the arrival of Homo sapiens some 150,000 years ago, "the global species extinction rate is now exceeding the global species birthrate at least a hundred fold, and soon will increase ten times as much." We are in the largest period of extinction since the end of the Cretaceous Period 65 million years ago.



Why care about the destruction of the natural world? Wilson reminds the reader that Man is part of Living Nature. Humans, along with other global species, have evolved over millions of years resulting in a highly complex, interconnected world. Man is dependent on Nature. He does not have the ability to quickly mutate into another organism that has different require- ments. He will be doomed if he ignores the environmental services Nature provides. Consider the obvious such as oxygen, decomposition of waste, and nourishment and the less obvious such as cures for diseases, energy, fibers, soil restoration, clean water and more. "Only Nature can serve as the planetary ark," states Wilson. Conserving biodiversity also makes good economic sense. Wilson estimates \$30 trillion of ecosystem services are given to us free.

What can be done? We must all be stewards of the Earth, eliminating overpopulation, wasteful consumption, habitat destruction, climate warming, spread of invasive species, pollution and overharvesting. Nations must implement laws to protect the environment. And there must be a global commitment to science, specifically biology. We must raise our children to be naturalists, Wilson tells us. We must gather information from citizen scientists who can help identify and study at least 10 million species that are waiting to be discovered.

Ruth Flournoy, River Oaks (TX) G.C. GCA Conservation/NAL Zone IX Representative

Kilowatt Ours

Jeff Barrie and his non-profit group, who are working to make energy conservation a core component of our national energy policy and culture, present this inspirational documentary film. Jeff was inspired by a speech Vice-President Dick Cheney delivered in 2001. Mr. Cheney

stated that over the next 20 years, 1,300 new power plants would be needed and that would mean that one new plant per week would be needed for the next 20 years. Jeff felt strongly that there were alternative energy solutions. This 55 minute awe-inspiring film begins with a vivid view of mountaintop removal for coal mining followed by the resulting devastation and consequences. The viewer then learns that half our electricity is generated by coal. The average house uses 30-kilowatt hours daily, or 5 tons of coal, per home. The consequences of uranium mining and the processing and storage problems follow. Then the viewer meets representatives from power companies, schools, businesses and regular folks who are finding ways to meet energy needs using conservation and green power.



Do not miss this DVD. It is a great film to share with club members. Many viewers have been brought to tears! *Kilowatt Ours* can be obtained by calling 615-340-5005 or going to:

www.kilowattours.org.

Lynda Strickler, Virginia Beach (VA) G.C. GCA Conservation/NAL Zone VII Representative

Hints for Everyday Living

Now that the heat is on, think about how dirty or clean your air filters are, if you have them. Think about opening or closing curtains, depending on the temperature and sunshine. Think about the temperature you have your thermostat set for and what rooms you really need to heat. Do you need storm windows? Compare your utility bills from last year and go to the Energy Star website to see what you can do to improve your energy usage. http://www.energystar.gov/

Tina Freeman, New Orleans Town Gardeners (LA) - Zone IX GCA Conservation Committee, Vice-Chair — Air Quality/Toxic Substances

Did You Know???

You as a GCA member can access wonderful conservation reports four times a year on the GCA website. Under "Members Only," click on "Committees." Scroll down to "Conservation" or "National Affairs and Legislation." Look for Conservation/NAL Meeting – followed by a date. Then simply click on any of the names you'll find listed for each area of interest. You can find out, for instance, what products are toxic to your pets. Or, that half of the world's tropical and temperate forests are already gone. Or, what is the future for "green collar" jobs? You can learn what conservation projects all our clubs across the country are doing! Check it out!

Contacts

Claire Caudill, Chairman
Conservation Committee
Garden Club of Houston (Zone IX)
518 Westminster Dr.
Houston, TX 77024-5610
(713) 932-8933
(713) 932-7850 (fax)
jccaudill@aol.com

Derry MacBride, Chairman
National Affairs and Legislation
Committee
Piedmont Garden Club (Zone XII)
One Crocker Ave.
Piedmont, CA 94611
(510) 547-1330
(510) 658-8797 (fax)
derry123@comcast.net

Elva Busch, Editor Santa Fe Garden Club (Zone XII) 20 Windridge Circle Santa Fe, NM 87506 (505) 982-4435 (505) 982-4437 (fax) elvabusch@comcast.net

Anne O'Brien, Assistant Editor Columbine Garden Club (Zone XII) 6018 East Cholla Lane Paradise Valley, AZ 85253 (480) 874-3323 annie39ob@cox.net



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Elva Busch, Editor