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livebetter

October 2007 volume 1 • number 1



LIEUTENANT GENERAL CARL A. STROCK

A General's Journey

From Katrina and Iraq to Sustainability

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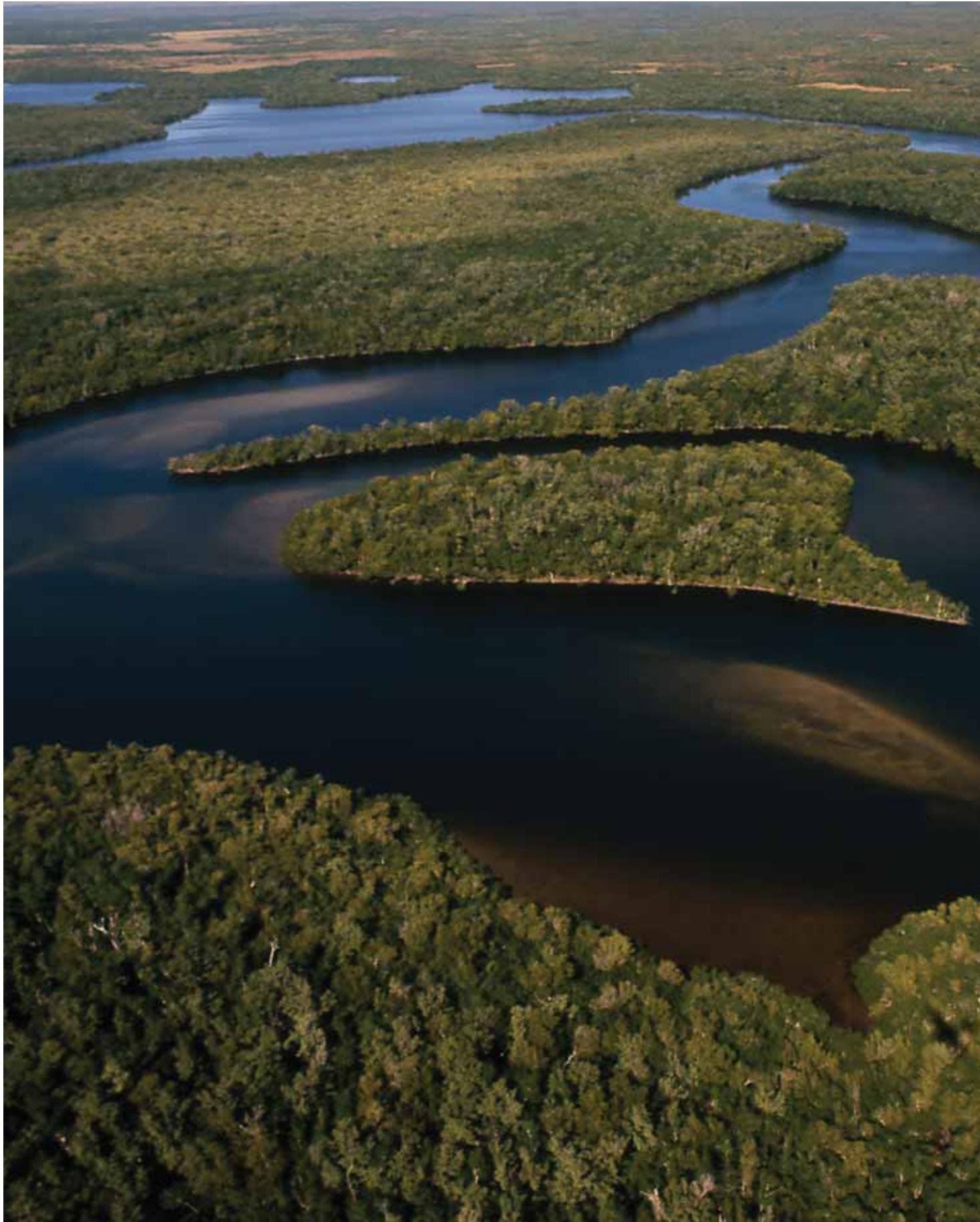
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which is one reason why more and more people are choosing to build log homes.





livebetter

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cover story

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From Katrina and Iraq
to Sustainability

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An aerial view of the Florida Everglades

Everyone Is Invited

It's always difficult to decide what to write, especially when you think someone may actually read it. Because, really, who cares what most people think anyway? Everybody has his or her truth nowadays, and few people seemingly search for absolute truth.

So, in the absence of that spiritual search for absolute truth, what do we really have left? I guess we still have, as a civilized society, the basics: Do unto others as you would have them do unto you; treat people with respect; be kind; and follow your heart. In light of those mainstays, a few really wonderful, caring people have agreed to work for almost nothing to start a consortium called, "Center for a Better Life" (www.centerforabetterlife.com) and its accompanying magazine, *livebetter*.

Our mission is to educate people about the importance of sustainability in their daily lives – to help promote the idea of preserving resources for future generations, to assist those individuals smarter than we are in getting their critical message out about global warming and to create a communications infrastructure to deliver this vital information. In addition, we're working with Federal agencies, non-profit groups and private industry to put together programs of change.

Everyone is invited to participate. There are no outsiders – only insiders. And we celebrate the accomplishments of all stakeholders. We're not political; we take no sides, and we try not to change anyone's opinion. We're just trying to create a framework to disseminate fact-focused information so you can decide for yourself how you feel about things and what to do about it. We do have one mantra, though: We go directly to the source to provide the truth – or as close to the truth as frail human beings can get.

As a direct result of this process, we've found some great human beings who have agreed to be involved with us because they care deeply about the world, humanity, the environment and its many inhabitants. Some are generals; some are admirals; some are members of tribal councils; some are internationally renowned experts within their fields; some are professors from major learning institutions; some are former presidential advisors; some are current federal executives in the White House; some are well-respected celebrities; and many are just like me – normal, everyday people with no claim to fame – just a conviction of the heart and a driving moral imperative to be involved because, according to Air Force Major General Del Eulberg, "it's the right thing to do."

We're focused on bettering the human condition. We're for profit so we don't have to ask for money to keep us afloat and because we need to be free of influence to accomplish our goals. We have big plans to become a driving force for social, environmental and humanitarian change because we know the power really is with the people. Most of us are old enough to remember Martin Luther King, Jr.; and some of us, like Vice Admiral Mike Loosie, continue to be inspired by John F. Kennedy's "Ask not what your country can do for you; ask what you can do for your country."

We hope you'll stand side-by-side with us in our goal to help all people "live better."

Rosemarie Calvert
Independence, WV

P.S. – This consortium is for everyone who cares about change and understands the imperative. When you have a moment, please share your thoughts on how we can make it work best. Contact me directly at rcalvert@centerforabetterlife.com. Thanks!



*[...] decide for yourself
how you feel
about things...]*

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Cover Photo-Bill Simone

In Memorial

livebetter is dedicated to John G. Colson, who passed away from lymphoma in 2007. He was not only a consummate publisher, but also a good friend. Without his enthusiasm, guidance and support this magazine might not have been possible.

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Below is a partial list of some really great human beings who have been kind enough to share their time, energy and enthusiasm with us in an effort to promote the importance of sustainability.



1. John Gordon, Pinchot Professor Emeritus of Forestry & Environmental Studies, Yale
2. Vice Admiral Loose, Deputy Chief of Naval Operations for Fleet Readiness & Logistics, U.S. Navy
3. Lieutenant General Strock, Retired, Commander-in-Chief, U.S. Army Corps of Engineers
4. Major General Eulberg, U.S. Air Force Civil Engineer; President, Society of American Military Engineers (SAME)
5. Major General Riley, Director of Civil Works, U.S. Army Corps of Engineers
6. Alex Beehler, Asst. Deputy Under Secretary of Defense, Environment, Safety & Occupational Health
7. Chuck Williams, Asst. Deputy Under Secretary of Defense, Installations
8. Steve Stockton, Deputy Director of Civil Works, U.S. Army Corps of Engineers
9. Jerry Delli Priscoli, Institute for Water Resources, U.S. Army Corps of Engineers
10. Ed Theriot, Director, Environmental Programs, U.S. Army Corps of Engineers
11. Roger Ballentine, President, Green Strategies (Green Consultant to Wal-Mart and former Energy Advisor to President Clinton)
12. Bill Downes, Chief Forester, Dept. of the Interior, Bureau of Indian Affairs
13. John Vitello, Forester—Senior Specialist, Dept. of the Interior, Bureau of Indian Affairs
14. Rear Admiral Symonds, Office of the Chief of Naval Operations, Director, Environmental Readiness Division
15. Joe Porrovecchio, Vice Chair, U.S. Green Building Council N.J. Chapter; SAME Fellow
16. Frank Hurd, Vice President and Chief Operating Officer, the Carpet and Rug Institute
17. Mark Rey, Under Secretary, Natural Resources & Environment, U.S. Dept. of Agriculture
18. Sally Collins, Associate Chief, Forest Service, U.S. Dept. of Agriculture
19. Edwin Piñero, Federal Environmental Executive, Council on Environmental Quality, Executive Office of the President of the United States
20. Professor Vincent Gaffney, Chair in Landscape Archaeology and Geomatics, University of Birmingham, The Institute of Archaeology and Antiquity, Edgbaston Birmingham, United Kingdom
21. Gary Morishima, Board Member, Intertribal Timber Council (a consortium of over 60 American Indian Tribes and Alaska Native Corporations)
22. Don Motanic, Technical Director, Intertribal Timber Council; American Indian Science and Engineering Society Foundation Trustee
23. Robert Glenn Ketchum, Nature Photographer and Author
24. The Kuhns Family, owners of Kuhns Bros. Log Homes

Thank you for caring deeply about the world, humanity, the environment and its many inhabitants.

Government leading by Example

Edwin Piñero
Federal Environmental Executive
White House Council on Environmental Quality

President George W. Bush has called on the Federal government to lead by example, be a good neighbor, and be a good environmental steward while, at the same time, meeting its missions in an efficient and reliable manner. In other words, he has challenged the Federal community to manage its environmental and energy footprint in a sustainable manner. But what is "sustainability"? There are many definitions. Suffice to say that, at the core, most definitions concur that the essence of sustainability includes the advancement of societies in a way that balances the social, economic and environmental needs of current and future generations.

Americans look to the Federal community to lead by example in fulfilling our national goals of supporting a strong economy, ensuring energy security, protecting our environment and natural resources and promoting technology transfer. Part of this role includes how we manage our environmental, energy and transportation footprint in the process of meeting our respective agency missions. The Federal government is one of the world's largest organizations – in number of buildings, in number of fleet vehicles and in sheer purchasing power. We are the single-largest buyers and users of energy, spend billions of dollars on information technology equipment and manage or own nearly 1 in every 5 acres of land in America. Our size provides us with the ability to transform markets. It is imperative that we be good stewards of our natural resources and the environment...



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yet, at the same time, operate efficiently and successfully to meet our missions.

As the Federal Environmental Executive (FEE), my office's mission is to promote sustainable environmental stewardship throughout the Federal government in order to progress us on our journey toward this state of sustainability. We define "sustainable environmental stewardship" to include those concepts, strategies, tools, practices and approaches that lead to environmental improvement that is sustainable over time, considers the long-term effects as well as the short-term, more immediate effects, and contributes positively, even if indirectly, to the social and economic condition. Clearly, policies and actions related to sustainability will be rather far-reaching and deal not only with environmental but also with social, economic, health, education and related fields. As the FEE, I get to focus on the environmental contribution to that broad picture. It is understood; however, that the ideas and practices we promote are in line with the broader concept and will lead to overall, long-term improvement of society,

the economy as well as the environment. To that end, we also work closely with our colleagues on the economic and social side of the equation.

I have the unique privilege to help craft government-wide policy and practices that will lead to us being more sustainable. I get to look at the government not so much as a policy and law-making body but as a very large organization with millions of employees, thousands of facilities and a very diverse portfolio. With this comes a notable environmental, energy and related economic footprint that needs to be managed. But also with this challenge comes great opportunity – to catalyze the marketplace, to partner with our private and public sector stakeholders and to lead by example.

While we can establish national policies, it is the Federal workforce, in its daily

activities located throughout the country and the world, that makes sustainability happen. How we manage and integrate environmental and energy aspects into our operations is key to success in meeting our mission and, at the same time, achieving our environmental and energy vision.

We connect the broad national goals with our day-to-day activities in large part through Presidential Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management, signed by President Bush in January of 2007. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, renewable energy, sustainable buildings, electronics stewardship, fleets and water conservation. In addition, the order requires more widespread use of Environmental Management Systems as the framework in which to manage and continually improve these sustainable practices. This order is a timely and strategic step forward, building upon the many and notable accomplishments of the Federal community. The order integrates the sustainable practices of prior executive orders into a more cohesive approach to environmental and energy management – moving toward sustainability.

The story to date is very encouraging. Over the years we continue to demonstrate the very successful efforts

of the Federal community. Examples of waste reduction, energy efficiency and affirmative procurement are plentiful across the entire landscape of Federal operations. More importantly, we continue to see the evolution of a strategic, holistic approach to environmental and energy management, where more integrated practices are replacing the outdated, isolated efforts approach. In addition, we have seen growth in the areas of cooperative conservation and environmental management systems, representing management philosophies and frameworks within which we perform many sustainable practices. The future does, indeed, hold great promise, and I am honored and privileged to play a small role in shaping that future. 

Log onto www.centerforabetterlife.com/comments to share your thoughts and to grade this story.

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Ten Easy Steps on the Road to Sustainability

Living "green" is an ideology most people share; however, the concept must be put into practice for real change to occur.

► The way to change begins with adjusting your mindset, rethinking how to look at things and understanding the interconnection between environment and life. ► After some practice, this thought process will become commonplace and you'll wonder why you didn't start on the road to sustainability sooner, especially because it's the "right thing to do" and it saves money.



Below you'll find 10 ways to begin this journey, if you haven't done so already. If you have, then use this as a checklist to make sure you didn't miss any of the easy things. Regardless, we're sure this road will take you to a place, metaphorically or physically, where you and your family can "live better."

1. Switch from plastic bags to bags made from cloth, soy, paper or cornstarch.

Traditional plastic bags are dual offenders because they are made from petroleum and do not truly biodegrade. As a result, in March 2007 San Francisco, Calif., became the first major U.S. city to mandate that larger retailers use biodegradable bags, including plastic bags made from soy or cornstarch. Numerous states and countries, such as Alaska, Great Britain, South Africa, Ireland, Bangladesh, Taiwan and China, have initiated similar legislation. Even large food retailers in Lhasa, Tibet, automatically provide cloth bags at check-out in an effort to protect their environment.

If you live elsewhere, you still can make a difference by asking for paper bags or bringing reusable



cloth shopping bags. Both are biodegradable, typically able to hold a greater volume of products; and they don't tear like plastic bags. Biodegradable plastic bags used for trash can liners, food storage and pet needs can be purchased via the Internet from vendors such as BioGroupUSA (www.biobagusa.com).

2. Switch from incandescent light bulbs to compact fluorescent light (CFL) bulbs.

Although compact fluorescent light bulbs cost more initially, each one provides about 6,000 to 12,000 hours of use in comparison to the 700 hours of use incandescent bulbs provide. Therefore, they actually provide consumers substantial savings in the long run while using about 75 percent less electricity – a huge benefit to the environment as well as to the pocketbook. For instance, based on an average cost of 10 cents per kilowatt hour, if you currently use ten 60-watt incandescent light bulbs and five 90-watt outdoor bulbs, you would save about \$112 per year by switching to CFLs and about \$616 over the lifetime of the CFL bulbs.

If you are a "CFL beginner" the switch can be a little confusing because CFL wattage differs from traditional incandescent bulb wattages. For example, a 13- to 15-watt CFL is the equivalent of a 60-watt incandescent bulb; and, a 16- to 29-watt CFL is the equivalent of a 100-watt incandescent bulb. In addition, make sure you choose the right CFL for the right purpose because CFLs are shaped differently.

Log onto www.gelighting.com for more information or to use General Electric's Energy-Smart CFL Savings Calculator.

3. Buy locally grown organic food whenever possible.

Buying locally grown organic food not only tastes better and costs less, but also helps

boost local economies, to include supporting local farmers. In addition, because organic food is grown without the use of pesticides, fewer chemicals are released into the environment which includes water supplies. Buying local also reduces greenhouse gases (GHG) because significantly less petroleum products are used to transport the food to market.

Farmers' markets are wonderful places to find locally grown, quality food. Before you buy, be sure to ask about the use of pesticides and chemicals to confirm the food is organic. Small farmers often cannot afford organic certification yet their produce or products may still be organic. Seek out food grown or reared by Future Farmers of America or 4-H members because supporting local education programs helps support your community, your neighbors and your children.

Organic foods also are available in many grocery stores. Look for a U.S. Department of Agriculture (USDA) organic label. Only foods that are 95 to 100 percent organic may use the USDA Organic Seal. Products with labels reading "made with organic ingredients" include from 70 to 94 percent organic ingredients. For more information about the distinctions in organic food labeling and USDA requirements for organic foods, go to www.ams.usda.gov.

4. Plug appliances into power strips and unplug power strips when not in use.

The U.S. Department of Energy (DOE) states that "electricity generated by fossil fuels for a single home puts more carbon dioxide into the air than two average cars." Many experts agree that the biggest home energy drains are household appliances and technology because even though these products may be turned off, they still use electricity.

Appliances on standby continuously draw

CFLs also use about 75 percent less electricity. This reduction in electricity is a huge benefit to the environment.

power as do cell phone chargers, printers and videogames. DOE data shows that 75 percent of the electricity used to power home electronics is consumed while the products are turned off. As a result, the DOE's energy saver tips recommend plugging computers, appliances, cell phone chargers, TVs and DVD players into power strips and unplugging the power strips when not in use. You'll get the added benefits of protecting your technology in the event of power surges while reducing your carbon footprint and your energy bill.

5. Conserve water and energy by washing only full loads of dishes and clothes.

Washing only full loads of dishes and clothes will conserve water and save energy. Furthermore, allowing dishes in the dishwasher to air-dry, using only cold water to wash clothes and using a drying rack or clothesline to dry clothes whenever possible also reduces your energy bill. To really save on water and energy, switch to an Energy Star-endorsed clothes washer, and dryer which uses 35 to 50 percent less water and 50 percent less energy.

If you live in a rural area and have a well, the most efficient washers and dryers, like the LG Tromm SteamWasher and Dual Humidity Sensors Dryer, are a dream come true. They use 90% less electricity and 90% less water (and clean unbelievably large loads while being ultra-quiet). No more worrying about the well going dry when you wash clothes during a summer drought. The up-front cost of an LG Tromm is significantly higher, but the convenience factor and the energy and water savings are phenomenal.

6. Switch to low-flow aerating shower heads and low-flush toilets.

United States households use an average of 400 liters of water per day, which is 40 times

more than the world-wide average and twice as much as consumed in Europe. Flushing toilets actually consume one-quarter of this water usage. Switching to bathroom appliances that consume less water will create significant water savings without any conscious effort or loss of comfort. For example, replacing an older model toilet with Kohler's Cimarron™ Comfort Height™ 1.28 gpf toilet with Class Five™ EcoSmart™ (EST) technology can save up to 3,200 gallons of water per year. Add on low-flow shower heads, such as Kohler's MasterShower® showerhead and handshower, and you can save an additional 20% while maintaining reliable water pressure and temperature. Conserving water today means more water for the future, plus it also saves on water bills.

7. Find alternative methods to supplement heating and cooling your home.

A 1-degree decrease in the thermostat saves an average of 1 percent on a heating bill, while a 1-degree increase in the thermostat saves on the summer cooling bill. One way to accomplish this reduction and still stay comfortable is to use ceiling fans. Add a ceiling fan with a directional switch to each high-use room of the house and watch your energy bill go down while your comfort goes up.

Turn the switch in the winter so that the fan propels the air downward for better distribution of heat. Do the opposite in the summer so you can turn the thermostat up and the air conditioner down. Augment the ceiling fan's cooling effect by using automatic blinds to block out the sun during the hottest part of the day. Or, why not turn the air conditioner off completely and open the windows on opposite ends of the house for cross-ventilation. This simple act, in conjunction with your ceiling fans, will not only cool the house on most summer days, but also provide healthier air for you and your family to breathe. Whichever options

you consider, maintain furnaces, air conditioners and heat pumps; and, replace filters as recommended.

8. Update your appliances to Energy Star-endorsed products.

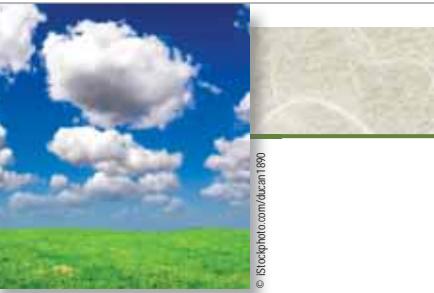
Newer appliances, especially those with Energy Star labels, use less energy than older models. According to the Energy Star website (www.energystar.gov), "qualified appliances incorporate advanced technologies that use 10–50 percent less energy and water than standard models. The money you save on your utility bills can more than make up for the cost of a more expensive but more efficient Energy Star model."

For instance, an Energy Star-endorsed refrigerator uses 40 percent less energy than a conventional 2001 model. Additionally, if you replace a 1990 refrigerator with a newer Energy Star model, you may save enough in electric bills to light the average household for four months. To really maximize your appliances' performance, make sure to use the energy-saving settings.

9. Be kind to your car.

Driving aggressively and at high speeds consumes more gasoline than driving calmly at or under the speed limit. For instance, each 5 mph above 60 mph can cost you about 20 cents per gallon. According to the Alliance to Save Energy (www.ase.org), speeding, rapid acceleration and braking can lower gas mileage by 33 percent at highway speeds and 5 percent around town. In addition, servicing your car at recommended intervals, changing the oil, getting tune-ups and taking care of your tires will increase the fuel economy of your vehicle. Replacing a faulty oxygen sensor can increase fuel economy by 40 percent. And just tuning up your car can increase your fuel economy up to 4 percent.

To maximize fuel economy, carpool, take public transportation, walk or ride a bicycle whenever possible. Take a risk and change some of your personal transportation patterns. You'll be amazed at the dollar savings you'll reap while



enjoying the freedom of not being glued to the car everyday.

10. Recycle.

Each person in the United States produces about 4.4 pounds of waste per day, according to the U.S. Environmental Protection Agency (www.epa.gov). Roughly 30 percent of this waste is recyclable.

Recycling greatly reduces the amount of garbage in landfills and in the oceans while simultaneously helping manufacturers use fewer natural resources. According to the EPA, using recycled materials makes a big difference in this country since "waste prevention has environmental benefits, including reduced energy consumption and pollution, conservation of natural resources and extension of valuable landfill capacity." To find the nearest recycling facility and to learn which materials you can recycle, visit www.earth911.org or call 1-877-EARTH911.

These 10 steps reinforce the premise that to ensure the environmental health of our planet and our families we can no longer afford to pretend that our actions do not have consequences. We, as consumers and energy demanders, have created a Pandora's Box of health issues and environmental catastrophes. Until we decide to conserve resources and to demand healthier, cleaner and greener energy options, we will continue to pollute the Earth and devastate its inhabitants. We have the power to make this change and the time is now. Become more involved by supporting legislators who advocate sustainable environmental policy. Write to your congressman and demand real change in order to create a sustainable future for you, your family and your planet. Take a stand now because, like it or not, sustainability is a life issue.

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Stewardship at sea

By Rear Admiral James A. Symonds, United States Navy
Dir., Chief of Naval Operations Environmental Readiness Division

I had the good fortune to meet the publisher of *livebetter* magazine this past March at the Society of American Military Engineers' (SAME) Department of Defense Briefings in Arlington, Va. One of her concerns, which I share, has been that the American taxpayer may be getting an incomplete and, in some cases, inaccurate picture of how the U.S. government and the organizations that service it conduct business with regard to the environment. Negative stories on this topic tend to dominate in the mainstream press and, as a result, most people never hear about new or ongoing federal initiatives that benefit the environment and that often have sustainability as a long-term goal. Based on our shared opinion that this information gap needs to be filled, I was honored when she asked me to contribute my thoughts on sustainability from a U.S. Navy perspective.

Defining "sustainability" in a precise way can be challenging, but I'd characterize it as "making efficient use of resources in a way that ensures the availability of similar resources for future generations." Today, the U.S. Navy defines its role in this regard as "environmental stewardship" – that is, we consider it our responsibility to take environmental factors into account when designing and procuring equipment, maintaining and operating our ships and aircraft, and running our bases.

The idea that the U.S. Navy is an environmental steward comes as a surprise to most people. To be frank, past generations of Sailors and Marines might think it incongruous that a branch of the U.S. armed forces that

has focused for over two centuries on training for and fighting conflicts at sea and, that is now integral to our nation's Global War on Terrorism would consider the environment a high priority. Speaking from personal experience early in my naval career, I can remember the days when everything we used aboard ship was tossed overboard with little understanding of the impact it might have on the environment. However, today's Sailors and Marines are operating with a different mindset. The current generation of men and women who are working their way through our ranks was raised with an environmental ethic from childhood, complete with curbside recycling bins, Earth Day celebrations and backyard decks made from recycled plastic lumber. The Department of Navy leaders who make policy decisions now ensure that environmental stewardship is an integral part of our planning and execution... because it's the right thing to do.

It would be a daunting undertaking to effectively summarize all of the Navy's environmental stewardship initiatives in a single article. As a starting point, it may be helpful to bear in mind that we commit about \$600 million per year to environmental programs. Our main objective in running these programs is ensuring sustained compliance with the law, which in turn enables us to pursue our primary mission of national defense. Believe it or not, without clean air and water permits, appropriate handling of hazardous materials, proactive management



Hull Technician Fireman Stefan Gingerich, assigned to Naval Special Clearance Team One (NSCT-1), provides positive reinforcement to a Marine Mammal System (MMS) dolphin during Rim of the Pacific 2006.
U.S. Navy photo by Mass Communication Specialist 2nd Class Jennifer A. Villalobos

of threatened and endangered species and cooperation with environmental regulatory agencies, the U.S. Navy would ultimately find it very difficult to get our ships out to sea and to keep our aircraft flying.

For this particular column, I'd like to offer some highlights of how we minimize our ships' impact on the environment at sea. The history of our approach to using "green" technologies on our ships is a bit complex, but the two essential drivers were: (1) the need to comply with new environmental regulations and executive orders beginning in the 1970s and (2) studies that consistently showed we could achieve significant cost savings by better managing our various waste streams.

One of our earliest initiatives, starting in the 1970s, was to install collection and holding tanks on our ships to prevent the discharge of raw sewage into coastal waters and in port. To avoid the accidental discharge of oil from our bilge water, we installed oil/water separators and oil content monitors in the 1980s. During this timeframe we began using anti-fouling coatings that were free of tributyl tin on our ship hulls to reduce hull drag, corrosion and associated fuel consumption without contaminating seawater. Today, we exclusively use topside shipboard paints with reduced air emissions (including volatile organic compounds or VOCs) to enhance air quality in port.

Also in the 1980s, we began incorporating hazardous material inventory control systems aboard our ships to optimize the use and minimize waste disposal costs for those chemicals. During this time we conducted a review of shipboard requirements for the various hazardous materials we use. As a result, we have since reduced the types of hazardous materials aboard ship by 66 percent, and expect to reduce that number by an additional 15 percent to further protect the environment and to enhance safety for our Sailors and Marines.

In the 1990s, we developed and installed plastic waste processors aboard ships to heat and to compress plastic trash for safe storage at sea: those two steps allow us to operate without discharging plastics into the ocean. We store these 18-inch plastic "hockey pucks" aboard and dispose of them properly when we return to port. Since installing this technology, we've begun seeking Earth-friendly alternatives to plastic food storage

containers, such as high-tech biodegradable films, and are investigating ways to eventually recycle the disks we generate. Another 1990s project was to install pulper/shredder machines aboard our ships to grind up biodegradable materials (food, paper/cardboard, metal and glass) for safe discharge.

We are presently in the process of converting all of our chlorofluorocarbon (CFC) air conditioning and refrigeration systems to non-CFC technology to help protect the ozone layer. Beyond these shipboard technologies, we have specific procedures and initiatives that protect the ocean environment as well. For example, we purge our ballast tanks twice at least three nautical miles from shore to avoid introducing invasive species when we come into port. We respond to oil spills world-wide and, in fact, cleaned up 50 percent of the oil from the Exxon Valdez spill in 1989. We stay away from coral reefs with our ships and serve as the Department of Defense representative on the U.S. Coral Reef Task Force.

We use the best available science to minimize conflicts with marine animals.



U.S. Marine Corps photo by Corporal Paula M. Fitzgerald

We also use the best available science to minimize conflicts with marine mammals. We avoid known marine mammal habitat areas when practical, post lookouts specifically to detect them and fund more than \$10 million in research annually to increase knowledge about how marine mammals hear and how they may be affected by sound. The marine mammals and sonar issue is a complete topic for another day, but for now suffice it to say that we take our responsibility to protect marine mammals very seriously and are working to further minimize our potential effects on them while ensuring the safety of our Sailors and Marines.

I'd like to conclude by thanking *livebetter* magazine and its publisher for the opportunity to contribute to this new and exciting venture. I believe the public deserves to see the whole picture, and we in government have a responsibility to share information about the sustainability programs the taxpayer ultimately pays for.

The U.S. Navy welcomes your comments. Log onto www.centerforabetterlife.com/comments to share your thoughts and to grade this story.

With a little help from our friends

Where do most Americans go when they want to visit the great outdoors? ▶ The average person may answer "national park" or "national forest." ▶ But, that's not correct. ▶ Believe it or not, most juniors, seniors and families visit one of the U.S. Army Corps of Engineers' (USACE) more than 450 lakes (www.CorporalLakes.us) and visitor centers nationwide. ▶ In fact, the 2,000 USACE Park Rangers meet and greet about 368 million visitors per year.



Because the Corps maintains and manages much of the nation's waterways, a lake or river is the major centerpiece with boating, fishing and swimming the main recreation activities. To make sure their guests stay safe while having fun, the USACE Park Rangers have adopted an Operation Water Safety public service campaign to encourage the use of personal flotation devices (PFD). According to Steve Austin, senior policy advisor for park ranger activities, "In 90 percent of drownings the victims were not wearing PFDs." Austin and his fellow Park Rangers are trying to correct this problem with an Internet and onsite education effort, one of which is specifically directed toward hunters and fishermen.

For the younger crowd the Corps' "Bobber the Dog" (<http://bobber.info>) works his magic via activity books, online cartoons, printable coloring pages and bilingual activity books. However, for the hard-to-reach adolescent crowd, the Corps has a different agenda that includes the use of eye-catching posters and videos. In particular, the Corps addresses the all-too-common problems of reckless boating and driving while under the influence in a video titled, "The Young and the Reckless."



For Austin, one of the most rewarding aspects of a Park Ranger's job is educating visitors and local school children about environmental stewardship. According to USACE Director of Civil Works Major General Don Riley in a May 2007 interview, "Our Visitor Centers are used as a very, very strong education component. Most all of our 38 Districts have a local education program, which is coordinated with the schools." Nationwide these

Districts provide collaborative hands-on environmental education for K-12 students on items such as the local flora, fauna and habitat; interpretive courses; Lewis & Clark expeditionary projects; restoring bald eagle habitats; and Mississippi River courses.

The welfare of the natural world and the education of that world are critical to the Corps' mission and to General Riley. So when he talks about the environment and sustainability, he also talks about the Corps' advances in engineering sustainability – building something that will be environmentally sound and sustainable over the years. To accomplish these goals, the USACE employs literally thousands of environmental and ecosystem scientists. Riley continues, "Aquatic ecosystem restoration is one of our 3 major missions." Flood control and navigation are the other two.

The Louisiana Coastal Protection and Restoration Study (LaCPR) is a prime example of how the USACE is working to create a process of engineering sustainability for its restoration mission through collaboration and knowledge sharing. This \$20 million, 2-year effort, begun after Hurricane Katrina, is focused on recommending higher levels of hurricane and storm protection. It looks at the comprehensive, integrated and sustainable restoration alternatives for each area –

[...one of the most rewarding aspects of a Park Ranger's job is educating visitors and local school children about environmental stewardship.— Steve Austin]

barrier island restoration, coastal restoration measures, marsh development, levees that could be possible – an inventory of all the different measures that may be put into place. A study of this magnitude normally takes 5 years, but Congress expedited the study. Riley says, "We're working fast and hard on this. We put an invitation out to all the environmental groups to work collaboratively on this with us."

To this end, the Corps invited national environmental organizations – National Wildlife Federation, Environmental Defense, Audubon, Sierra Club and Ducks Unlimited, to name a few – to meet with them to share what the Corps is doing and to get the environmental organizations' input. General Riley thought it was important to "invite them all to be part of the deliberations."

According to Riley, the Corps' collaboration with these groups "is getting stronger and stronger. In the past 5 years that I've been in Civil Works, I've really seen it blossom. When I first arrived, there were a lot of complaints that we (the Corps) wouldn't even talk to them. We're listening to them now, and we're making progress on our collaboration. We have a limit on our authority; we can do very little that Congress doesn't specifically authorize and appropriate funds for; but, this collaboration has gone a long way to increase involvement with environmental organizations and to improve our advice to the Administration and to Congress."

Riley continues, "We also have the Dutch on our team. When the Dutch had that storm in '53 – the North Sea storm that inundated 1/3 of their country – they invited the Corps to advise them. So we advised them on their project and all those nice, big barriers . . . we were part of that. But what they found over the years and

what they're finding right now is that they (the barriers) have had a tremendous impact on the ecosystem and the degradation of the waters, flora, fauna and habitat. So they have a billion dollar study that is going back to look at the entire system to see what they can do to restore their ecosystems to a more natural state.

"We're moving forward in a very, very balanced approach, and it will probably take 20-30 years. Restoring barrier islands and creating marsh takes time. We'll use adaptive management. Put a little piece in place, and see how it adapts; and, if it works, expand it. If not, adjust it."

"We're moving forward in a very, very balanced approach, and it will probably take 20-30 years. Restoring barrier islands and creating marsh takes time. We'll use adaptive management. Put a little piece in place, and see how it adapts; and, if it works, expand it. If not, adjust it. On the engineering side we call it 'anticipatory engineering,' which means engineering a system to operate over the range of possible outcomes rather than building something for a single, particular purpose."

When asked whether this type of "anticipatory engineering" were new, Riley commented "I've heard no one else use this term up to this point." He continued, "The problem is to get funding for it. Our work is cost-shared, and sponsors have to pay so they may not want it to operate like this. They want their area protected; but we may need this feature in the future. So

let's engineer in a more anticipatory sense and then do adaptive management. Anticipatory engineering is proactive and adaptive management is reactive. I'm trying to get them to think in both terms – to anticipate what you may see as well as to respond to what you do see.

"This is really groundbreaking. The risk maps that we're producing for New Orleans will tell them what their annual risk is. This is the first time in the world that this has ever been done, and experts from all over the world have helped to produce this."

This is part of our new risk discussion with our stakeholders. We used to base all of our plans on national economic development: Did it have an economic benefit that exceeded the cost? And so, when you built the levees in New Orleans, it was based on costs versus benefits.

Now we are moving to a risk-based decision framework. This is groundbreaking, prototypical, never been done before in the world. We brought experts in and developed this framework for risk-informed decisions: What's the risk to population? What's the risk of choosing the wrong alternative? What's the risk to the environment if you put something into place? – so you'll see more and more of our discussions about risk and risk-mitigation as we go forward."

General Riley continued, "This is really groundbreaking. The risk maps that we're producing for New Orleans will tell

them what their annual risk is. This is the first time this has ever been done, and experts from all over the world have helped to produce this. The challenge we're facing now is how to communicate this. We've got all this great engineering work that would fill up a room, but it has to mean something to the people.

So, we're working with the community leaders, the mayor's office, the parish presidents' offices; it's only for New Orleans right now. When we first told them, they said 'We're trying to get people to come back and invest in the area. Don't scare them by telling them what their risk is.' And we said 'No, we can't do that. Our responsibility is to inform them. Then let's figure out how to mitigate their risk.' We've got to inform the public as to what risk they face now and what risk they'll face after we get the hundred-year protection and how we can mitigate that risk even further through raising your home, flood-proofing your home, clearing the flood plain, moving homes out of there, evacuation plans"



you do with that? What can we improve? What can we do better?" So we took that \$20 million-\$30 million and poured it into improved techniques and modeling to really build a sustainable system. We had no idea how much it might cost and thus no idea how long it might take because of that. And then when you talk about restoring an entire coastal ecosystem, that's a big deal because it's never been done before. We've been looking at the total system – both structural and non-structural approaches."

"So we took that \$20 million-\$30 million and poured it into improved techniques and modeling to really build a sustainable system."

This is part of the Corps' commitment to the new collaboratively based knowledge of sustainable and holistic engineering. Riley reiterates with unbridled enthusiasm, "I think it's very exciting because it's the first time it's ever been done on this scale before." Even more exciting is that this methodology has been designed to be used in every state; and, no doubt, its emergence will have a huge impact on the future of engineering. 

According to Riley, "there's been a lot of talk over the years about this but never any funding to do anything about it. So we jumped on it with our IPET report (the Hurricane Katrina Interagency Performance Evaluation Task Force), which is 6,000 pages long. We initially did that as a forensics report, and then we expanded that by saying 'O.K., what do

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Is the Quest for success killing us?

By Alex Criss

What do a six-figure income, high-status job title and reputation for a good work ethic get you at the end of the day? Some say “closer to the American dream”; others say “closer to the grave.” Most Americans can’t wrap their heads around the idea of valuing time over money – particularly because we, as a nation, see the two as interchangeable. I’m not taking this to the capitalist extreme of “everything has its price,” but we do tend to equate things quantitatively.

The United States has the best healthcare technology and the greatest amount of wealth in the world. It has been the origin of almost every health craze, diet fad, exercise movement and work-out DVD of this and the previous century. Despite that, our expected lifespan, according to the CIA World Factbook, is two years less than for those ham-and-cheese-loving, wine-with-lunch-drinking, two-pack-a-day-smoking Spaniards. How can this be?!? . . . in a word, “siesta.”

A recently released six-year Greek study by Dimitrios Trichopoulos from the Harvard School of Public Health and other researchers states that people who took a 30-minute siesta at least three times a week had a 37 percent lower risk of heart-related deaths. With heart disease still the No. 1 killer in the United States, the idea of a siesta deserves some thought. For those unaware, a “siesta” is a mid-day rest period that some refer to as a “nap,” but I see it as much more. It’s not only a welcome stress reliever but also a statement about a quality of life that



Most Americans can't wrap their heads around the idea of valuing time over money...

delivers something even we Americans can value – quantifiable results. In other words, a “siesta” provides value during the finite hours in our lives instead of just giving them a price tag.

Speaking of “bad habits” such as drinking or the slothful mid-day rest, when did having a glass of wine in this country apart from a fine meal, wine-tasting or sailing on a yacht become a sign of alcoholism? Many studies illustrate that two glasses of wine a day can lower a middle-aged person’s risk of heart attack by as much as 30-50 percent. The same studies indicate that red wine can raise the good cholesterol, aka HDL, and lower the bad cholesterol, aka LDL. The “nectar of the gods” is also chemically rich in antioxidants that benefit our bodies in a myriad of beneficial ways.

So, why shouldn’t I have a glass of wine during my lunch break? If it makes me sleepy, I can just catch a quick mid-day rest. I would be willing to do the same workload, stay later or even come in earlier. Considering the stress that the baby-boomers’ retirement will have on the capacity of pensions, Social Security, Medicare and Medicaid,

shouldn’t corporate America, the government and the healthcare industry want to maximize every type of health benefit to the fullest?

Instead of looking for more answers, we need to start questioning the assumptions we already have, such as our definition of “success.” A 28-year-old junior executive with an Audi, a 1500-square-foot condo and an MBA from a major university could be the American archetype of “successful.” However, if one were to look closer, an observer may discover a not-yet-30-something at his or her breaking point physically, mentally and financially. Sixty- to eighty-hour work weeks, combined with \$100k+ in student loans, outrageous financing charges for the pad and the wheels, plus a mindset so focused on greater efficiency, productivity and/or output encourages a

life identified only in terms of statistics, percentages and revenues.

Now, let’s examine this poor workaholic’s Spanish counterpart. First, student loans are non-existent in Spain because students there need to pass only certain exams and to pay nominal processing fees to attend university. Second, in Spain (and much of the world) mass tran-

sit is recognized as not only the most convenient but also the most environmentally friendly and financially responsible choice for moving people. Figure in the savings on the items relevant to just those two lifestyle differences and we could knock off almost \$200k from the ulcerated, Xanax-prescribed, Redbull-drinking American junior exec’s negative net worth.

Now on to the living arrangements: A Spaniard residing with his parents into his 30s or until married won’t suffer much (if any) social ridicule. Our Spanish friend will not make as much money,

but he will have access to that elusive and magical creature known as “nationalized healthcare.” Factor in the automatic four weeks of annual paid vacation and we have a successful formula for avoiding stress. This is far from the case for Americans who work in the country known to have the fewest vacation days.

According to the U.S. Bureau of Labor Statistics, only 77 percent of American workers have access to paid vacations with an average annual leave of two weeks or less.

of Labor Statistics, only 77 percent of American workers have access to paid vacations; the average annual leave is two weeks or less.

So let’s bring the comparison full circle. Who has the better life – the American with the comparatively immense income, huge condo, big-shot title, corresponding debt, stress, heart disease and increasing lack of any non-quantitative thought processes . . . or the low-stress, no swinging pad, public-transported, free healthcare-benefiting, vacationing and afternoon-napping Spaniard? I believe the answer lies in the best of both worlds; but, whichever way you lean, the bottom line is that the stress level of the average U.S. worker must be reduced. And it’s up to us to make sure that happens – whether it’s through naps, wine with lunch, mandated vacations or a required recess hour. We, as a nation, must “chill-out” or we will collectively “freak-out,” requiring more Prozac, Xanax and hours on the psychoanalyst’s couch than the free world can supply. 

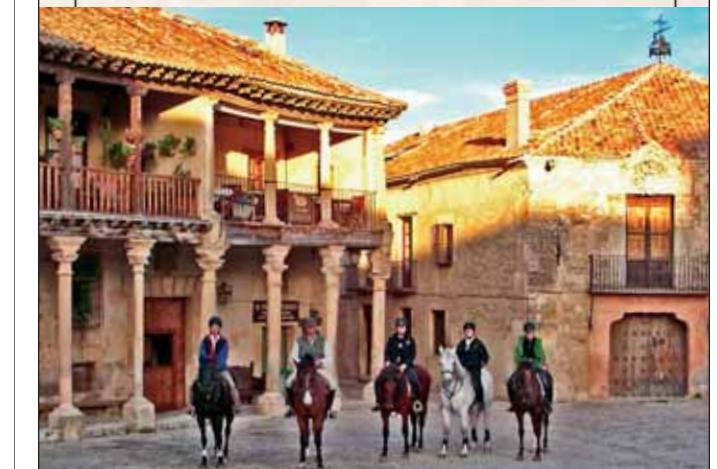
Alex Criss has an MA in Spanish and an MBA from West Virginia University. For the complete version of his column with attached links to his research please log onto www.centerforabetterlife.com/comments to share your thoughts and to grade this story.

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Why Everyone Needs to Build Green

Not every sustainability initiative benefits all stakeholders – particularly when it comes to business. ▶ But green building may be the anomaly. ▶ According to the United States Green Building Council (USGBC), a green hospital, designed with maximum sustainability in mind, reduces hospital stays for patients by 2 ½ days – a direct benefit to people. ▶ When a green home is built, the market value of the building automatically increases per square foot – an economic gain.



And a green office building has a 40 percent carbon savings when compared to a standard commercial building – an environmental benefit. But green building doesn't impact just one of these segments; all three occur concurrently with the implementation of the "Triple Bottom Line." According to Joe Porrovecchio, SAME Fellow, LEED®AP and Vice Chair USGBC New Jersey Chapter, the "Triple Bottom Line" is a balanced model that gives equal credence to place (environment), profit (economics) and people (health and comfort) – each benefit improving the other. "Doing the right thing today is the 'Triple Bottom Line.' It makes green building simple."

What Is a Green Building?

The USGBC, a non-profit and voluntary organization consisting of 10,000 member companies, was founded in 1993 with a vision of transforming buildings and communities into "environmentally responsible," "economically profitable" and "healthy places to live and work." In fact, this push to go "green" has



[It may be difficult to understand how buildings can impact the quality of life and health of people, but buildings that are built green improve the health of their occupants.]

spawned an industry worth more than \$12 billion within one decade and has underscored a successful emphasis on productivity and efficiency – two standards that are vital to any business.

And the movement to build green, with its robust and hefty gains, is easier to join than one may imagine by utilizing items such as landscaping that retains stormwater, roofs that reflect heat and low-emitting materials that reduce pollution. This win/win relationship partners savings and revenue generation with a healthier and more safely built environment.

Why Does Green Building Matter?

According to the Department of Energy (DOE), there are more than five million commercial buildings and 76 million residential buildings in the United States. In a world where global climate change and energy conservation are of critical concern, modifications made on the literal home-front may be the answer to these complex challenges.

Startlingly, the USGBC concludes "buildings are responsible for nearly 40 percent of carbon dioxide (CO₂) emissions in the United States due to energy use, water consumption and other operational issues. Carbon dioxide, a greenhouse gas that is a major contributor to climate change, has increased 18 percent since 1990 due to the rise in energy consumption." According to Tom Hicks, USGBC vice president, "Improving energy performance will immediately . . . reduce building energy-related greenhouse gas emissions." Because of its enormous impact, green building alone could be used as a national strategy to significantly reduce the effects of global climate change and could curtail this nation's energy dependence.

To move this agenda forward, the USGBC created the Leadership in Energy and

Environmental Design (LEED), which is a green-building certification program that provides for the best implementation of green strategies into the design, construction and maintenance of a building. Becoming LEED-certified is a proactive endeavor toward which environmentally conscious businesses, governments and industries voluntarily move so that factors such as site planning, air quality, material use and innovation are all assigned a score – ultimately leading to USGBC LEED Certification. LEED Certification has four levels; the highest is LEED Platinum, and the lowest is LEED Certified.

According to Porrovecchio, the federal government, including the Department of Defense (DOD), the DOE and the U.S. General Services Administration (GSA), is required to meet a minimum LEED standard of Silver, which is only two tiers below the top certification. The Pentagon received this distinction in 2003 with its Metro Entrance Facility, which was the first DOD facility to receive such certification.

Porrovecchio sees this approach as a multilateral, multifaceted system of balance because "... traditional practices of building are known to be less economical and less healthy," while green building, on the other hand, is economically smart, people-oriented and environmentally friendly.

The Triple Bottom Line: People

It may be difficult to understand how buildings can impact the quality of life and health of people, but buildings that are built green improve the health of their occupants.

Indoor air quality (oftentimes plagued with allergens, molds, CO₂ and other pollutants) has become a major health issue as the

average American now spends 85-95 percent of his/her time indoors. Because living and working in such an adverse environment can have devastating health impacts, the Surgeon General classifies indoor air quality as a top public health threat.

According to the Environmental Protection Agency, indoor air quality can be anywhere from two to five times worse than outdoor air quality. And in the worst



conditions, air inside has tested up to 100 times more polluted than outside air. Such poor air quality has been linked to allergies, asthma and other illnesses.

Conversely, a Lawrence Berkeley National Laboratory study linked green building designs and improved air quality to positive results. As an example, the findings showed that the cost of healthcare for communicable respiratory illnesses could be reduced by up to 20 percent as a result of green building while healthcare costs linked to asthma and allergies could be reduced by 18-25 percent.

Jeff Riegle, an environmental engineer and LEED Accredited Professional with international engineering and project management firm AMEC, has worked in both green and non-green buildings. He maintains there is "definitely a remarkable difference . . ." working in a green building. Often relying on natural daylight rather than on artificial lighting, green buildings have changed the

livebetter department building smart

working environment for Riegle, who says, "Whenever you can have sunlight, it's definitely beneficial."

In fact, this reliance on daylighting has a tremendous impact on school-aged children as well. According to the USGBC, students in classrooms that featured natural lighting performed better on tests than their counterparts in traditional buildings with the "least amount of natural light." Moreover, the results were stunning: Students obtained scores 26 percent higher on reading tests and 20 percent higher on math tests – making green building especially attractive to concerned parents and educators who want their children and students to grow in a healthy manner intellectually – not just physically.

Green building's positive influences are also felt on adult workers in an office environment. "A modest investment in soft features, such as access to pleasant views, increased daylight, fresh air and personal environmental controls can quickly translate into bottom-line savings," the USGBC has written. Such design elements lead to less employee absenteeism, higher production within industry and greater work productivity (from 2-18 percent) within offices.

The Triple Bottom Line: Economics

Green building isn't beneficial only to the health, performance and well-being of people; green building also leads to economic gains and incentives.

Riegle states that if implemented from the beginning, when a building is simply a blueprint, green buildings can be just as cost-effective as traditional buildings – an economic incentive giving builders and investors "more bang for their buck."

In findings delivered to Congress, the USGBC stated, "... higher first costs are often recovered within three to five years through lower operating expenses and utility rebates for energy-saving equipment." In fact, green building leads to energy cost savings from 20 to 50 percent.

But the benefits to going green aren't seen only in savings; benefits also come

in the form of capital gains. In Lawrence, Kan., Wal-Mart has created a green-built store known as "Eco-Mart." Instead of relying on traditional overhead lighting for the entire store, "Eco-Mart" relies on natural sunlight through skylights in one-half of the building – a move that also reduced the cost of the store's electricity bill.

When sales from the natural sky-lit section of the store were compared to the artificial-lit sections with overhead lighting, findings indicate that those areas more heavily saturated with natural light had higher sales. Furthermore, the Heschong-Mahone Group, conducting research on behalf of the California Board for Energy Efficiency Third Party Program, determined that stores relying on sky-lighting gained 40 percent more sales than their non-sky-lit counterparts.

Still, some argue that going green is a costly endeavor that does not deliver a comparable return. Riegle couldn't disagree more. When implemented correctly, green building and design are economically smart and necessary. As Riegle sees it, "an ounce of prevention is worth a pound of cure." And it appears that the "pound of cure" comes in the increased market value of a green-built space.

The USGBC cites studies illustrating that for every dollar saved by implementing green technology or green design, a home or building's value is increased by \$20. In addition, a January 2007 survey of 250 residential builders across the United States released by Green Builder Media reported that "... buyers are willing to pay a premium of between 11 to 25 percent for green-built homes."

The bottom line, then, is that going green both brings in and saves more green for businesses and private citizens.

The Triple Bottom Line: Environment

While people and economics realize tremendous gains, the natural environment also benefits greatly from green development. As the nation continues to grow and to use many archaic and detrimental forms of

energy, green building provides hope for the future of a healthier environment. According to the DOE, if California took every commercial and industrial building within the state and covered it with solar energy panels, the state would have enough energy to use during the day.

And, in a post-9/11 world, the natural environment plays an increasing role in national security. "Buildings powered by on-site renewable or super-efficient energy systems . . . are less susceptible to supply interruptions due to unpredictable circumstances such as natural disasters, power glitches and world events," according to the USGBC.

As the country moves closer to a green existence, the health of the environment and the safety of the world are also improved.

Green Empowerment

With headlines reflecting a bleak future of global climate change and of deadly greenhouse gases, the world sometimes may seem grim. But one of the most significant solutions to such gloomy headlines is building green – an option that would reduce electricity consumption by 70 percent and greenhouse gases by 40 percent.

At times it may seem impossible to have a positive impact on the world, but green building offers a realistic, affordable solution to improve people's lives, to make economic gains and to nurture the environment – all at the same time.

Porrovecchio echoes that thought. While many people look to the future and wait idly for solutions to a myriad of increasing environmental problems, the answers are in the present. "There are so many things that can be done today. We just need to adopt and move forward with the current day's technology. We don't have to wait for future solutions to today's problems," says Porrovecchio.

The answer is here today. And the solution is simple: Build green.

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A General's Journey

From Katrina and Iraq
to Sustainability

Upon first glance, Lieutenant General (LTG) Carl A. Strock, the 51st Chief of Engineers and Commander of the U.S. Army Corps of Engineers (USACE), doesn't embody the stereotypical retirement story – no frocks of white hair, no wrinkled visage. To the contrary, Strock's youthful appearance, tanned skin and short, well-kept, darkened-blond hair all defy the classic retirement story. Nevertheless, Strock retired on May 17, 2007, in a ceremony hosted by General George Casey, Jr., Army Chief of Staff. The occasion provided a capstone sendoff for Strock, who served more than three years of his four-year term as Commanding General.

As the three-star general was on the cusp of crossing into this period of respite, he sat in his chair on May 7 at the Washington, D.C. USACE Headquarters to discuss his experiences and his event-filled career. Wearing a tailored set of camouflaged fatigues, Strock leaned forward – poised, polished and professional – expressing his trademark confidence, charisma and engaging smile.

Many would not expect this combination of ease and self-confidence on the face of a leader whose organization the media has relentlessly criticized for two of the most polarizing, unpopular events of the Bush Administration: Hurricane Katrina and the war in Iraq. But Strock's career is defined by more than public opinion and perception of both events.



Photo by U.S. Army Corp. of Engineers

In fact, as Strock explains it, with an American flag and USACE flag framing his figure, the Corps and he have a mission that extends far beyond the common divisiveness of politics – a mission that is effectively and proudly centered on sustainability. So much so, in fact, that the Chief declared in no uncertain terms, “We’re absolutely committed to it!”

“The Scenic Route”

Born in Georgia to an Army family, Carl Strock sought a future steeped in patriotism and public service. Like so many other children of career officers, Strock entered Virginia Military Institute (VMI) after high school graduation. But, as destiny would have it, he left before graduating. As a result, he found his way into the Army as a Vietnam War draftee, who carefully

cultivated his craft as an infantry enlisted man until he was accepted into Officer Candidate School (OCS).

“I was attracted by the Corps’ history and reputation and asked to transfer to the Engineers when I saw that, in both peace and war, this organization makes a positive difference for the nation every day.”

Eventually, in 1975, Strock graduated from VMI with a civil engineering degree,

which was eventually accompanied by a master’s degree in civil engineering from Mississippi State University – an educational and career shift that placed him on a path toward the Army Corps of Engineers. “I was attracted by the Corps’ history and reputation and asked to transfer to the Engineers when I saw that, in both peace and war, this organization makes a positive difference for the nation every day,” Strock explained.

He became the 51st Chief of Engineers – a leader who commands the largest public engineering, design and construction management agency in the world – in 2004. Upon being promoted to this position, Strock recalls the Army’s Vice Chief of Staff’s describing the former’s trek toward Corps leader as “the scenic route.”

Regardless of how he got there, it was in



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this position that Strock inherited a post-9/11 world, a growing war in Iraq, the rebuilding of Afghanistan and, eventually, a devastated Gulf Coast following Hurricanes Rita and Katrina. “It has certainly been eventful,” said the Chief.

Inherit the Earth

When the average citizen conjures up images of the U.S. Army Corps of Engineers, dam building and levee proposals are usually what come to mind. But the Corps, comprised of 34,600 civilians and 650 military personnel world-wide, is much more, running deeper than the waterways they pledge to protect and to make navigable.

In fact, the Corps’ myriad and diverse responsibilities are so vast that they boggle the mind. Within the United States alone, the Corps has built more than 606 dams

and manages 456 water resource projects covering an aggregate of more than 11.5 million acres. According to the Corps, their water resource recreation sites have more visitor days than either the National Parks or National Forests. “Nearly 400 million visitors annually enjoy fishing, hunting, swimming and other water-related sports

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at Corps recreation areas,” revealed USACE Director of Civil Works, Major General Don T. Riley.

Historically, the Corps, a permanent institution since 1802, was among the first to recognize the need for protection of natural resources and, in fact, the U.S. Army Corps of Engineers safeguarded one of the few surviving buffalo herds. In addition, the Corps was influential in creating and developing America’s first national park, Yellowstone, in 1874 and kept watch over the nation’s jewel until creation of the National Park Service in 1918.

Domestically and internationally, the Corps is America’s earth steward, on a constant vigil to provide research and protection for projects as diverse as the polar ice caps through their Cold Regions Lab to assisting with water development

in Africa via their internationally renowned Water Resources Institute.

In addition, one of the Corps' main missions is to assist and to protect U.S. war fighters internationally, including those in Iraq and Afghanistan. As part of this assignment, the USACE is responsible for engineering, environmental management and construction – oftentimes serving as the stabilizing force during conflict by creating a safely engineered environment for both troops and allies.

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As such, the earth over which LTG Strock assumed command as the Chief of Engineers reflects a constantly evolving world. But his tenure, according to some, may be unique because of a series of events never before experienced – flood

waters and gale winds crumbling manmade structures, fundamental terrorists' and radical insurgents' destroying Corps-built infrastructure and climate change becoming mankind's most pressing concern.

Designed To Get Beat Up On

Rather than applauding the Corps for their ongoing and significant achievements, the world that Strock inherited was eager to blame the Corps for their shortcomings – many of which are limitations within the Corps' very design. "In every case, we do only what we are empowered to do by the Congress," Strock said. "That's one of the things that sets us apart from the person on the street. If there's something you want to do and there's no law against it, you can go do it. But as a public servant, I have to be specifically empowered to do something. So I've got to find a law that allows me to do what it is I want to do."

In fact, LTG Bob Flowers, Strock's predecessor and fellow VMI graduate, said, "The Corps was designed to get beat up on." As Flowers explained, the USACE lacks both Cabinet-level representation as well as the independent authority to tackle obstacles without federal oversight and regulation. "That's how we're designed," Strock, concurring with Flowers, commented.

However, while the Corps may seem distant to many citizens, an organization for which there is often little praise and much finger-pointing, Strock believes that the limitations of its design may actually benefit voters. "I (the Corps) am sometimes limited by the way laws are written (by Congress), and I am told that I have to do things," Strock said. "So, to an extent, the Corps has been carrying out the will of the people."

But Strock doesn't place the onus of responsible decision-making solely on Congressional representatives, whose choices sometimes have massive social, human and environmental repercussions. Instead, Strock believes in balance among the various entities involved. "Now, I don't want to completely

hide behind that and say 'well, we did it because we were told to do it' because we certainly have the ability to influence the decisions that are made in that body," Strock said.

As a result, the Corps often presents Congress with studies, findings and information. Strock reiterated, "We do what we're told to do; but, we can also influence the direction of policy in the long run."

A Mission of Sustainability & Balance

Much like people, the Corps itself is not a perfect entity. For every dam built, levee created or project completed, there is an impact on the environment and the world around it, with the results often causing dissent from Corps critics.

"In our 200-year history, science, technology and our understanding of the environment have obviously improved significantly. In many cases we did many things without really understanding the consequences. However, there were situations where we knew there would be negative environmental or social consequences but the projects were constructed anyway to serve a greater national need at the time. Now we have the ability to better understand all the outcomes because we've seen the manifestation of those consequences and because we can better predict what those consequences might be," Strock said. In all cases, the Corps' general approach is to avoid damage, minimize that which cannot be avoided and mitigate the remainder.

Through much of the Corps' past, the goal was unbalanced: The mandate was to focus more on economic gains and less on environmental impacts. However, time has tempered the scales of both economic and environmental interests.

Under the direction of the 50th Chief of Engineers, LTG Bob Flowers, the Corps unveiled the "Environmental Operating Principles" (EOP), signed by then-Chief Flowers, with Strock in attendance at a 2001 Earth Day Celebration. The EOP outline



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environmental tenets and Corps goals such as "strive to achieve environmental sustainability," "seek balance and synergy among human development activities and natural systems" and "accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare."

Even after Flowers' term ended in 2004, Strock rallied behind these principles and continued the Corps' drive toward sustainability. According to Strock, the EOP serve

two purposes: one, public; one, private. To Corps workers and staff the EOP have become a mission statement of sorts. "We want our employees to have an environmental ethic, a sustainability ethic," he said. To the public the EOP act more as a notice. "I also say to external audiences 'this is a report card. If you see us acting inconsistent with these principles, bring it to my attention,'" Strock said.

However, both Strock and Flowers note that this environmental interest-balancing approach isn't new; it has been core to the

Corps since the beginning. For example, in the 1930s, Strock said, the Corps was involved in projects throughout the Columbia River. During this time fish ladders were created "because we understood we had to have some way to continue that natural process of migration of salmon up and down the river," Strock said. And, according to him, over time the USACE has adapted by creating more sustainable and environmental approaches that have increased the number of passages for migrating fish.

Truly effective environmental sustainability is "a combination of responding to things that are already happening and trying to shape things" that have yet to occur – a mission of balance, according to Strock. But the Chief believes that sustainability is also about correcting past indiscretions and mistakes. "We did know in some cases that there would be environmental impacts," Strock said. "We've also made a commitment in our strategic plan to look back at what occurred and where we can . . . restore any damage we have caused to the environment."

Katrina: Understanding Risk

While the push for sustainability is a unifying plus, the USACE has faced issues of a divisive nature. When LTG Flowers was asked to comment on Strock's tenure as Chief, he stated quite simply "Carl's had it tough." And among the reasons for it being so "tough" were the war in Iraq and the rebuilding of New Orleans after Hurricane Katrina.

"I've been very proud of the way they responded," Flowers said. "Other parts of the government would have totally been brought to their knees. The Corps wasn't and that's thanks to Carl Strock."

Some critics, though, have been less complimentary. Following levee failures in New Orleans, the city sued the USACE for more than \$75 billion and placed full responsibility on the Corps. Strock disagrees with their assessment of the Hurricane Katrina tragedy.

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"When I hear that the people in New Orleans lost their lives because the Corps of Engineers decided to build a levee, that's nonsense," Strock said, the pitch of his voice changing. "Now I don't want to get into a public debate about it, but that's nonsense," Strock said. "We built the levees at the request of local authorities because they wanted to expand the development of the city of New Orleans; that was a decision made by others, and we carried out that decision."

According to Strock, "There is an understanding that if the surge exceeds the capacity of the levee, then the water is going to come over the levee, and people are going to be in jeopardy. If the event is stronger than that, then we assume that the area has been evacuated because people understand flood level protection."

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Strock blames the levee failures and overtapped levees, as well as a spotty evacuation on behalf of the city, for "a lot of loss of life." In such cases, the reliance cannot be placed solely upon man-made structures susceptible to the unpredictable forces of nature and time; instead, evacuations must be heeded. There will always be an inescapable risk, Strock said.

"We think our job is to contribute to informed decisions. That informed decision-making can happen in the halls of Congress, or it can also happen in the mind of a homeowner in the lower Ninth Ward," Strock said. "We have an obligation to let each person know that we will afford a certain level of protection and that there is still some residual risk. And they need to understand that risk as they make decisions about whether to build or not. We have an obligation to explain that risk in terms that can be understood by the general public."

One major difference that Strock has cited since Katrina is the Corps' attempt to add the loss of human life to the risk equation: "What if I tell you that the economic risk is \$100 million and that the human risk is four lives? What is a human life worth?"

Despite the political fallout that came from Katrina, Strock still believes the tragedy's outcome is important to his legacy as Chief. "I would like to be remembered as the public official who responded to the terrible tragedy of Hurricane Katrina by effectively informing the public, avoiding finger pointing and, after rigorous analysis, accepting accountability for the Corps' contribution to the loss of life and property," Strock said.

Iraq: Blowing Up Schools & Building Hospitals

A less contentious but equally visible task during Strock's tenure has been rebuilding the Iraqi infrastructure and supporting the war fighters in the Global War on Terror (GWOT). "Remarkably," Strock continued to comment, "we haven't gotten a lot of heat on what the Corps is doing there because I think that everyone recognizes that the work is necessary and right and good. They also understand that it is a very difficult environment."



Photo by U.S. Army Corp of Engineers

In Iraq the Corps assists U.S. and allied troops in their GWOT mission in addition to reaching out to the Iraqi people by providing for their basic infrastructure needs such as electricity, potable water and sanitation while also providing for their basic societal needs such as healthcare and education. "We're putting much more effort into working in the Iraqi communities than we have in previous wars," Strock said. In addition, by utilizing Iraqi workers, the Corps hopes to provide economic benefit to disenfranchised Iraqi families while, at the same time, taking advantage of their excellent engineering and construction skills.

But this relationship is weakened and strained because of insurgents' using intimidation with Iraqi contractors working with the Corps. "That's part of the reason our work is so difficult – because the enemy knows that and, as quickly as we make something, they destroy something. They're destroying schools . . . sometimes they do it before a ribbon-cutting. They'll blow the school up just as we're beginning to occupy it. Sometimes they've done it after the school is occupied when children are there. We face a ruthless and a very sophisticated enemy who watches our every move," Strock said.

At the end of the day, though, Strock believes that Corps members risk their lives

to bring hope, stability and a much-needed infrastructure to the lives of the Iraqi citizens – an effort he considers humanitarian.

One of the Corps' newest projects is a 94-bed children's hospital, which will specialize in children's cancer research and treatment; it is scheduled for completion in 2008. The hospital is being built in Basrah principally because children under age 5 in southern Iraq suffer a high mortality rate from cancer; this is one of the more than 140 USACE medical construction projects in Iraq.

"The people look for essential services," Strock said. "They want a quality of life . . . they did not enjoy a high quality of life across the board under Saddam (Hussein), and they have great expectations that we'll provide a better quality of life."

An Officer and a Gentleman

Strock has an interest in all aspects of his inherited earth – environmental, human and economic. When it comes to sustainability, LTG Flowers believes that Strock used the EOP effectively and that he has "taken them to heart" – something that he may have done in the literal sense.

An example of this is Cadillac Heights, a low-income African American community susceptible to flooding outside Dallas, Texas. From an economic perspective, it is a community not worth saving when compared to the costs of levees needed to protect it. "The right thing to do, economically, is to buy people out and relocate them and not try to protect that city because it's going to cost more to protect it than the structures behind the levee would be worth," Strock said.

But in Strock's world there is more to worth than dollars; worth has a deeper social and moral significance: "The problem with that is, if you pay people for the value of their homes, as you must, at fair market value, and I give you \$40,000 for your modest house in Cadillac Heights, where are you going to find a place to live in Dallas, Texas that allows you access to the schools, jobs and that sort of thing that Cadillac Heights



General Casey and Mrs. Julie Strock at General Strock's retirement ceremony.

Photo by U.S. Army Corp of Engineers

now has?" Strock posed rhetorically.

Strock, a leader and an American hero to those who know him, has given his life to the service of others and to the environment. Through years of experience and dedication, he knows that there are no clear-cut answers – that every component of decision-making is a balancing act among a myriad of interests. But, to Strock, one interest has the potential to trump all others – it is an interest of the heart that leads to the sustainability of family and community.

"As modest as it is, they have generations invested there. This was their grandfathers', their great-grandfathers'. This is their families' and friends', and they don't want to give it up. There is an intrinsic value there," Strock said. "The Corps will protect Cadillac Heights even though it doesn't make sense economically."

Whether leading the Corps to find solutions that save communities like Cadillac Heights or saving the pallid sturgeon from extinction, Strock is the type of commander who balances his confidence with compassion and who displays a leadership style that has created a career of great achievement – one that inspires and serves as an example to those who follow.

True heroes don't look for what they can get; they look for what they can give.

"I leave the Corps with absolutely no concern about the future. I feel this way because I know and trust the person who will succeed me . . . but, more importantly, because I know and trust the thousands of civilians and Soldiers I have worked with over the last 10 years," Strock said.

And LTG Carl Strock, the 51st Chief of Engineers and Commander of the U.S. Army Corps of Engineers, has given much and has asked for nothing in return. It is these character-enriched actions that have led people like LTG Flowers to confidently say "he is an officer and a gentleman in the finest sense."

The Corps welcomes your comments. Log onto www.centerforabetterlife.com/comments to share your thoughts and to grade this story.



What if a substantial amount of the world's population lacked the physical ability to have a sufficient amount of drinkable water on a daily basis? Would this be considered a global crisis? Should it take precedence over other international issues such as education, trade policies or even world hunger?

Humbled in the face of Water: A World-wide water shortage



What if a substantial portion of the world's population could not obtain a sufficient amount of drinkable water on a daily basis? Would this be a global crisis? Should the problem take precedence over other international issues such as education, trade policies or even world hunger?

The answer is "yes" because, according to a U.S. Environmental Protection Agency Fact Sheet, humans can live approximately 30 days without food but only 7 days without water. H₂O is the life-giving resource with the most immediacy in terms of health and the quality of life. Water is essential not only for sustained human development but also for sustained development of all life on Earth.

Currently about 1 billion of the estimated 6.6 billion people in the world lack access to sustained and consistently potable water, according to the United Nations Educational Scientific and Cultural Organization (UNESCO). And that number is increasing dramatically every day.

Blame for much of this world-wide shortage stems from the potentially lethal

combination of war, drought, lack of cooperation between governments, conflict over water rights and ownership of water supplies, and the general lack of funds and organization to create and/or to sustain water-gathering, treatment and transport capabilities. In addition, the growing water demand caused by population growth and continued rising consumption, matched with the decreasing supply of this non-renewable resource because of industrial use, urban expansion and other manmade devices, is making water supply an issue of national security and the type of matter over which people fight wars.

The simple fact is that demand for water has grown six-fold since 1900 – twice the rate of the population growth. Whether because of the average home's growing size, changes in sanitation practices or production of more products requiring water use, such a trend cannot continue without shortages in other parts of the world.

While Americans and Europeans presume that water will flow from a tap, less than half of Asia and a quarter of Africa have access to piped water through household connections. Piped water into households averages about 85 percent for the wealthiest

Close to one-half of all people in developing countries are suffering at any given time from a health problem caused by a lack of water and sanitation deficits.

20 percent of the population, compared with 25 percent among the poorest 20 percent.

Although the water shortage issue is indeed a global one, those hardest hit live in developing countries (particularly those in Africa), the least developed countries, landlocked countries and small island developing states. These populations face the greatest challenges in achieving targets such as adequate water supplies and systems for sustainable development because of cumulative issues, including lack of funds, geographical challenges and logistics.

Some may argue that this is simply a case of the “haves” and “have-nots.” Yet this argument isn’t logical. The “haves” would generally be those with access to a consistently safe and readily available system of water and water delivery, largely thanks to environmental factors and the socio-economic status of a specific geographical location. However, even wealthy cities, such as London, England, and the state of Florida in the United States, are now facing water shortages. In fact, Florida is in the middle of its most critical water shortage ever with parched inland areas despite some improvement in coastal rainfall.

Meanwhile, the true “have-nots” are those living in arid and/or polluted areas without the ways or means to migrate to a fresh water source. For example, more than two-thirds of the entire population of Ethiopia does not have access to fresh water.

Close to one-half of all people in developing countries are suffering at any given time from a health problem caused by lack of water and sanitation deficits. Inadequate drinking water services are key characteristics of poverty with serious implications for a local population — death, disease and delayed economic development. Almost

two in three people lacking access to clean water survive on less than \$2 a day with one in three living on less than \$1 a day. These implications are not isolated nor are these incidents independent of each other.

While legitimate contributing factors lead to water shortages, all arguments and opinions aside, access to something as basic and essential as clean drinking water is not a privilege reserved for members of the G8 or those who can afford it. It is a right that should be bestowed on every citizen of our planet.

Added to the current state of affairs, if one were to consider the impact of environmental problems such as global warming on



the water supply issue, the picture broadens. Global warming’s projected effect upon sea level rise over the next 10 years will cause a significant salt intrusion increase into the fresh water table.

This danger is aside from the continuing trend of water pollution in many local, regional and national watersheds. For example, to date, 33 of the 50 United States have issued fish consumption advisories because of mercury contamination in the water, which is primarily caused by coal-fired power plants.

Water waste is another issue. North Americans use about 400 liters of water a day or 104 gallons. To put this in perspective, consider that the amount of water used every day by the average North American would fill a full-sized, freestanding, name brand, refrigerator-freezer home appliance. By contrast, the average European uses only half of that amount on a daily basis; and



the average individual world-wide uses only 10 liters or 2.6 gallons daily for drinking, washing and cooking. Aside from the fact that the average North American uses 40 times the world-wide average of water used every day, wastewater disposal is a separate issue with an average of 6 liters per flush.

Progress is being made on the issue of water waste in America. California’s legislature, for example, is considering a bill that would promote the use of waterless urinals, which would save an estimated 8 billion gallons of fresh water over the next decade. The idea of the waterless urinal may at first seem unsanitary, but it is truly the type of ingenuity and sanitation mixed with conservation that will help curb the wasteful ways of most Americans and that will create a trickle-down effect, both metaphorically and literally, of water savings.

Added to the current state of affairs, if one were to consider the impact of environmental problems such as global warming on the water supply issue, the picture broadens. Global warming’s projected effect upon sea level rise over the next 10 years will cause a significant salt intrusion increase into the fresh water table.

According to Randy Goble, vice-president of marketing for Falcon Waterfree Technologies, “Water free urinals work similarly to standard urinals, relying on gravity to carry waste down the drain and through the plumbing. The notion that



Water is an inalienable right – a human right that is required not just to survive but to thrive. It is within our power to preserve this right for all life. To do less would be unconscionable.

you need water to flush away urine for the purpose of sanitation is a myth, according to several independent studies showing that water free urinals harbor five times fewer bacteria than water-flushed urinals."

Products such as those manufactured by Falcon Waterfree Technologies utilize a barrier consisting of a biodegradable liquid sealant that acts like a one-way trap to allow waste to pass through the drain. The result is a non-mechanical, non-water using and more hygienic solution that costs less to install and operate than water-flushed urinals, saving an average of 40,000 gallons per year per urinal.

Common sense water conservation initiatives such as the one in California and another by the U.S. Army promise to eliminate this unnecessary flushing, freeing up billions of gallons of water for essential purposes. Imagine the impact of replacing each standard urinal with a water free urinal in every government, corporate and educational institution. To put this into perspective, one water free urinal will free up enough water per year for 219 people to drink 8 glasses of water per day, which is the amount recommended by most healthcare professionals.

Now that the severity of the potable water issue has been established and the urgency for action toward resolution is beyond merely a pressing need, what can be done? According to international water issue expert Jerome Delli Priscoli, Ph.D., of the U.S. Army Corps of Engineers' Institute for Water Resources, the answer hinges upon individual action, instead of waiting for changes to come from top down. In an article in the 2004 issue of Water International, Delli Priscoli asserted: "Our water resources

demands do not conform to traditional jurisdictional boundaries. The ethical basis of professionalism is now moving from paternalistic to informed consent. Participation is a means to adapt and to make our democratic institutions work better in this context. But participation is also helping to reinvent our civic cultures."

This philosophy could resolve the water shortage issue via an individual call to action – an empowerment by the people, for the people. Water is not claimed as a manifest destiny or on a first-come, first-served basis. Water is an inalienable right – a human right that is required not just to survive but to thrive. It is within our power to preserve this right for all life. To do less would be unconscionable and unforgiveable.

Thus, all citizens must demand and actively participate in making the democratic systems, as well as all other forms of government, reinvent the way they see, view and use water to accomplish this most basic goal. This can be done not only by individuals but also by towns, cities, states and even national capitals. The first step is a simple one: to actively increase the Earth's potable water access while decreasing unnecessary daily water usage. The second step is a little more complex: to work on changing our attitudes and opinions about entitlement so that, collectively, we are able to secure a better future for the world's population.

What Can You Do About the Global Water Shortage?

Every day you can make a difference in combating the global water shortage by practicing simple conservation measures and by reducing unnecessary household water consumption. One person, or a household, can make a difference by using some of the tips for indoor and outdoor water use and conservation listed below:

What to do indoors:

1. Never put water down the drain when you may have another use for it, such as watering a plant or gardening or cleaning.
2. Many homes have hidden water leaks. Verify that your home is leak-free by reading your water meter before and after a two-hour period when no water

is being used. If the meter reading is not the same, a leak needs to be fixed.

3. Repair dripping faucets by replacing washers. A faucet dripping at the rate of one drop per second causes a cumulative water loss of 2,700 gallons per year; that total adds to your water bill while overtaxing your sewer or septic tank.
4. Check and maintain every toilet.
 - a. Check for toilet tank leaks by adding food coloring to a tank. If a toilet is leaking, color will appear within 30 minutes. (Flush as soon as the test is done as food coloring may stain a tank.)
 - b. If a handle sticks in the flush position and lets water run constantly, replace or adjust it.
5. Avoid flushing a toilet unnecessarily. Dispose of tissues, insects and other such waste in the trash rather than in the toilet.
6. Take shorter showers and use an ultra-low-flow shower head.
7. Retrofit household faucets by installing aerators with flow restrictors.
8. Operate automatic dishwashers and clothes washers only when they are fully loaded; set the water level to match the size of the load.
9. Store drinking water in the refrigerator instead of turning on the tap for a cool glass of water.
10. Do not use running water to thaw meat or other frozen foods. Defrost food overnight in the refrigerator or use the defrost setting on your microwave.
11. Kitchen sink disposals require lots of water to operate properly. Start a compost pile as an alternate method of disposing food waste. (Garbage disposals can also add 50 percent to the volume of solids in a septic tank and can lead to malfunctions and maintenance problems.)
12. Consider installing an instant water heater at your kitchen sink so you don't have to let the water run while it heats up. Doing so saves water and reduces heating costs.
13. Insulate water pipes. You'll get hot water more quickly and avoid wasting water while it heats up.
14. If you have a well, check your pump. Listen to see if the pump kicks on and off while the water is not in use. If it does, you have a leak.
15. When adjusting water temperatures, instead of turning water flow up, try turning it down. If the water is too hot or cold, turn the offender down rather than increasing water flow to balance the temperatures.

What to do outdoors:

1. Water the lawn only when it needs it. To determine that fact, step on the grass. If it springs back up when you move, it doesn't need water. If it stays flat, the lawn is ready for watering. Letting the grass grow taller (to 3 inches) will promote water retention in the soil.
2. Deep-soak your lawn. When watering the lawn, use the hose or sprinkler long enough for the moisture to soak down to the roots, where it will do the most good. A light sprinkling can evaporate quickly and tends to encourage shallow root systems. Put an empty tuna can on your lawn. When it's full, you've watered enough.
3. Water during the early parts of the day; avoid watering when it's windy. Early morning is generally better than dusk because it helps prevent the growth of fungus. Early watering and late watering also reduce water lost to evaporation. Wind can blow sprinklers off target and speed evaporation.
4. Use efficient watering systems for shrubs, flower beds and lawns. You can greatly reduce the amount of water by using strategically placed soaker hoses, rain barrel attachment systems and simple drip-irrigation systems.
5. Plant drought-resistant shrubs and plants. Many beautiful shrubs and plants thrive with far less watering than other species. Replace herbaceous perennial borders with native plants. Consider applying the principles of xeriscaping for a low-maintenance, drought-resistant yard.

6. Put a layer of mulch around trees and plants. Mulch will slow evaporation of moisture while discouraging weed growth.
7. Don't water the gutter. Position sprinklers so water lands on the lawn or garden, not on paved areas.
8. Don't run the hose while washing your car. Clean the car by using a pail of soapy water and only use the hose for rinsing.
9. Use a broom, not a hose, to clean driveways and sidewalks.
10. Check for leaks in pipes, hoses, faucets and couplings. Leaks outside the house may not seem as bad because they're not as visible, but they can be just as wasteful as leaks indoors. Use hose washers at spigots and hose connection to eliminate leaks.

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An Important First Step in Combating Climate Change

America's forests are enchantingly beautiful and mysteriously engaging. They cast a spell over anyone who enters their kingdom by exerting a magical power unequaled in nature and by creating a presence so commanding that the rest of the natural world bows to it. No one who truly ventures into the forests escapes their mesmerizing aura or captivating spell. American Indians have always known the true power of the forests, as have a group of devoted, educated caretakers known as foresters.

The rest of us were largely unaware of their true power. We considered them beautiful but benign, awesome but without spirit. Humans were the powerful life-givers and life-takers, and forests existed to do our bidding – to build our cities and to provide our amenities – always at our beck and call with a clearly stated hierarchy – humans, the masters; forests, the servants.

But all that has changed. In fact, all that never was. It took global warming for many of us to understand that the reverse is true and always has been. Forests are the life-givers and the life-takers, the magical “beings” that transform nothing into something. Humans are just lucky enough to be tagging along for the ride. And the ride will stop sooner than we think if we don’t set our priorities straight.

“If you touch a forest, you touch everything,” says John C. Gordon, Pinchot Professor Emeritus of Forestry and Environmental Studies at the Yale School of Forestry and Environmental Studies. This expert points out that forests make the air breathable, provide more than half of America’s clean drinking water, cool lakes

and streams for cold water fish, provide food and medicine, help regulate local and regional rainfall, increase arable land, create the world’s most renewable building material, provide an endless amount of fuel, maintain a loving home for the world’s animals and plants and bathe us daily in a scenic beauty that is beyond reproach.

And, as if humans didn’t already owe forests much, Americans are only now beginning to understand their indispensable role in global warming. According to the Pew Center on Global Climate Change, 1/3 of the United States is covered by forested lands – an indispensable natural resource that serves as a vital component in combating global climate change.

Larry Wiseman, president of the American Forest Foundation (AFF), a non-profit organization that promotes education about and conservation of America’s forests, dedicates his time to their preservation. He believes that forests in the United States are an asset not only at home but also to the world at large. Unfortunately, Wiseman says, the importance of forested

land is not often understood by citizens and landowners. “I think people don’t understand the important stake forests have in healthy growing,” Wiseman reiterates. “Americans are disconnected in many ways from the landscape in which they live.”

This disconnect between landowner and land, Wiseman says, is fueled by the urbanization and suburbanization of America. But this disconnect, in fact, is one that Americans and the world cannot afford, especially as global climate change worsens. After all, Wiseman explains, forests serve as one of the primary “carbon sinks” on earth.

Most people have heard this term repeatedly and have surmised that it’s important. But the question still remains: What exactly is a “carbon sink”?

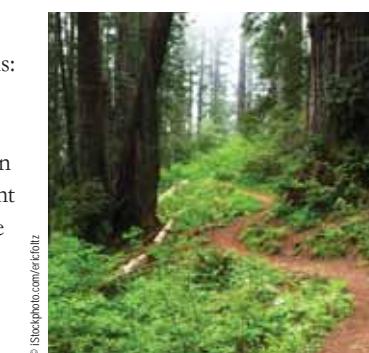
Forests require carbon dioxide (CO₂) for efficient growth. So, as trees age and grow larger, they are able to absorb more CO₂ from the earth’s

atmosphere. As a net benefit to society, carbon levels are reduced and the impacts of global warming are curtailed. Wiseman recently explained that each tree can absorb up to one ton of CO₂ every year of growth. Thus, forests become a “sink” for carbon – reducing CO₂ levels from the atmosphere and containing them within the wood.

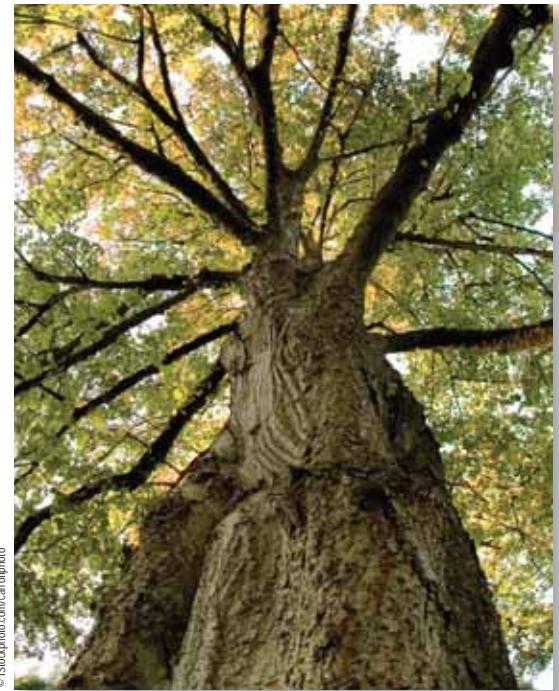
The Union of Concerned Scientists (UCS) explains in a current report titled ‘Recognizing Forests’ Role in Climate Change’ that “In the U.S. forests are currently net carbon ‘sinks’ sequestering more carbon than they emit. A key reason for this is that forests in the Northeast and elsewhere, cleared

previously for agriculture, are now reestablishing on abandoned lands.” The UCS findings also cited that forests could reduce carbon levels of “projected fossil fuel emissions through 2050” by 10-20 percent.

While forest growth is of utmost importance, balance is critical to gain



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the desired result. For forest growth to be healthy, to some extent, it must be contained and managed, explained Chief Forester Bill Downes and his co-worker John Vitello, forester and senior specialist, both from the Department of the Interior's (DOI) Bureau of Indian Affairs (BIA).

Downes and Vitello, through the BIA, work with Indian tribes on more than 18 million acres of forested tribal lands, as well as with 56 million acres of Indian agricultural lands. The BIA follows tribal practices of sustainable forestry management by utilizing the forests for economic benefits, cultural development and daily survival. However, preserving forests and utilizing them as a benefit against climate change does not occur without a plan.

"I think that one point most people don't understand is the fact that . . . we can't just walk away from the forests. Nature isn't just going to take care of them and make them into parks like people want to look at because when you leave it up to nature, you're going to get what nature is going to give you, which could be disease, insect infestation or catastrophic fire," Downes said. "But we can mitigate all three of those things through active management of the forests."

Vitello agrees and explains, "There's been a lot of talk recently about using Indian forests as a model for other public landowners and maybe even for private landowners.

"If you touch a forest, you touch everything."

for the forest inhabitants.

Furthermore, in American cities often devoid of forested land, temperatures have a tendency to rise exponentially. With global warming expected to generate higher temperatures throughout the country, forests can have a cooling ability through "transpiration," Vitello says. This process, similar to the perspiration of humans, cools not only the trees but the humans who live near them. Aside from being climate change agents, water management tools, cooling devices and carbon sinks, forests have the potential to wean fossil-fuel dependent nations, such as the United States, off their long-standing addiction to archaic and polluting forms of energy. Forests, if utilized properly, house acres upon acres of an untapped energy source which, if utilized, would reduce CO₂ levels even more.

The U.S. Geological Survey (USGS) states that as climate change continues, drinking water supplies will be adversely impacted in both quantity and quality available. With this in mind, America's forests, as the leading supplier of drinking water, must be managed sustainably. If the forests are not safeguarded appropriately (i.e., allowed to grow without a synergistic relationship with mankind in both the present and the future), catastrophic results will occur.

Vitello describes this delicate balance by delineating the possible outcomes as a result of both extremes: If not managed enough,

If not managed enough, forests will continue to overgrow and will create a perfect environment for fire and destructive disease.

leaves come down, trees die naturally or they are harvested. A tree will eventually either decay and release carbon, release the carbon through combustion or be used in a product that stores the carbon longer," Vitello continues. All of this can be referred to as the "short-term carbon cycle," which, unlike the "long-term carbon cycle," provides no human-caused increases in CO₂ emissions because the tree was going to release this CO₂ in the short-term anyway.

Instead of focusing on the "short-term

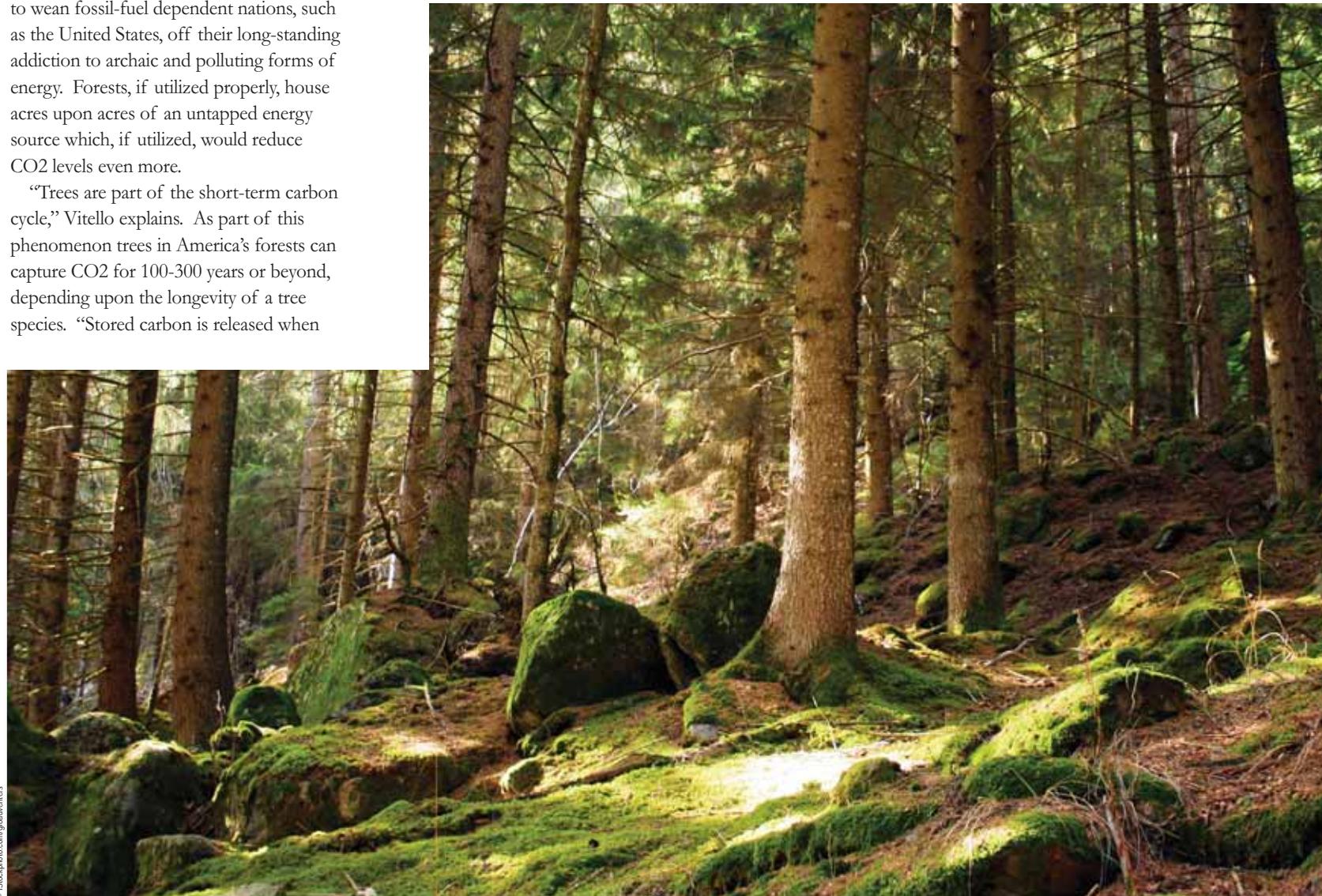
carbon cycle," Americans have focused on the "long-term carbon cycle" by utilizing fossil fuels that would never get released by nature in the short-term, and by adding CO₂ to the atmosphere in an unnatural, cumulative and unprecedented fashion. Vitello reiterates, "What we've been doing as a culture is focusing on long-term carbon reserves (specifically, fossil fuels) and releasing that into the atmosphere." As a result of increased CO₂ emissions, the impacts of global climate change have been both exponentially

expedited and exponentially worsened in a manner nature never intended.

Vitello and Downes, though, believe that an answer to America's addiction to coal and oil can be curtailed through innovation. "We're involved in using biomass for energy production . . ." According to Vitello, "biomass" (wood waste that includes limbs, roots, leaves, etc.) can be used to create heat, electricity, liquid fuels, (cellulosic) ethanol and diesel. "All of that holds promise because it's still using the short-term carbon cycle – carbon that is going to be lost in the short-term anyway. It's called being 'carbon neutral,'" explains Vitello.

Downes notes that more than 100 billion tons of renewable energy resources (in the form of carbon biomass) is created and not utilized every year; all 100 billion tons are produced in America alone. And, according to Vitello, the United States is limited only by its lack of desire for innovation. "We need a national will to make it happen," Vitello says. "Why not create a system in which we are energy-independent, using whatever waste material that we have. Why not let that be the vision?"

The conservation and protection of the world's forested lands is Dr. Gordon's continued avocation. After a lifetime of study and devotion, he understands the forests probably as well as anyone else on earth, which is why the retired Yale professor is known as one of the world's foremost forestry experts. Gordon concurs with Downes and Vitello, yet he adds that trees (through providing shade) also indirectly lessen the



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results of global warming. While trees increase shade and cooling, they also allow Americans to consume less energy through air-conditioning, which relies on electricity – often fueled by coal-fired power plants that are the main source of CO₂ with respect to the human-induced impacts of climate change.

Gordon also explains that trees have the ability to not only curtail global warming but also to exemplify global climate change trends and impacts. This reputable source says that through a complex process of matching patterns of tree rings in existing trees to those in past trees, scientists are able to better understand climate change by looking for “indicators on the amount of change.”

While many activist groups and vocal organizations like to criticize the United States for its forestry practices, Gordon, who has consulted extensively on forests throughout the world, thinks that the United States serves as an example to the rest of the world for proper and healthy forestation. “On the whole,” Gordon says, “The United States has done pretty well.” In fact, Gordon knows that the United States has created more wood per year than it uses – a promising sign for both sustainable development and for global climate change.

When presented with a strikingly frightening hypothetical of a world with no more viable forests, Gordon said that the impacts would be devastating, but they would first be felt locally, as opposed to nationally or internationally. Without good forest management or with uncontrollable forest fires, Gordon said that local climates will change; wind speeds will increase; warmer temperatures will occur; water will

rapidly run off land and cause soil erosion, landslides and, inevitably, more CO₂ released into the atmosphere.

As a proposal to thwart off such chaos and devastation, Gordon explained that three imperative realizations about forests must be understood:

1. “We ought to keep the forests we have as forests,” Gordon explained.

As urbanization of the American landscape grows, forests are cut down for the purpose of expansion and development – an economic move that, in the long run, is not worth the potential devastation that could occur. Current trends hold out promise that America’s forests will remain forests because 2/3 are privately owned with 55-60 percent overseen by private landowners instead of private corporations, Gordon said.

2. “Forests are important to every aspect of our current existence,” Gordon said. “If you touch the forest, you touch everything.”

Forests impact not only the air that we breathe but significantly lessen the effects of climate change. If America’s forests are abused, water supplies and safety will be at the top of the list of consequences. But, just as a lack of forests will have negative repercussions, well-managed and conserved forested lands will lead to the betterment of mankind by reducing CO₂ and ambient temperatures while providing natural supplies of drinking water in great quantities and with increased quality. In fact, a properly managed forest allows for the perfect balance of healthy tree and vegetation growth with water yield. In addition,

forests shade lakes and streams for cold water fish allowing them to live in waterways that would, otherwise, be too warm because of the sunlight. This interdependency provides the key to nature’s synchronicity.

3. “Think about forests and what they can do,” Gordon said. “Understand forests better.”

This point is incredibly important – especially because America’s huge resources of forested land are owned largely by private citizens. These landowners must assume the moral and economic obligation to protect one of America’s greatest natural resources and accomplish this goal in a fact-focused, educated manner with sustainability at the forefront of every decision. As a new generation comes forward and is plagued with the global climate crisis and economic pressures they have inherited, it will become increasingly critical that they continue preservation and not allow coveted land treasures to be decimated by urban development – at any price.

As the world faces a global epidemic of international climate change, it’s ironic that the same land that hundreds of millions of Americans flock to every year for beautiful outdoor experiences is such a fundamental, working life force that simultaneously manages to provide so many life-sustaining services. Who would have thought that within those majestic redwoods, awe-inspiring spruce trees and enchanting holiday pine trees would exist such a complex bioengineered system capable of engaging, protecting and giving life.

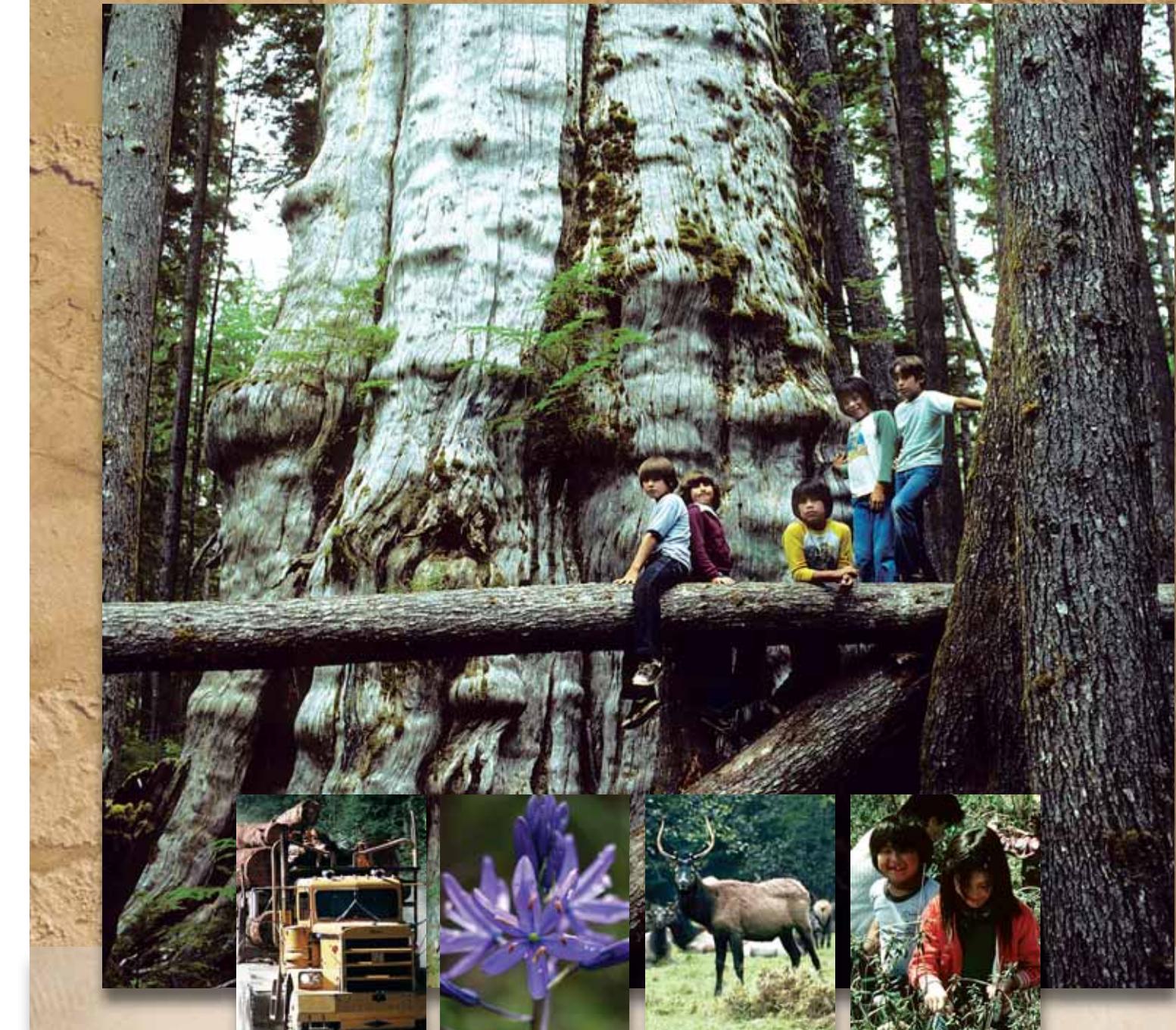
Hanging on the wall of Downes’ BIA office in Washington, D.C., is a picture with a framed quotation and motto that seems to be more pertinent today than ever before: “Managing our lands . . . Reshaping our future.” Forest management, education and conservation may, indeed, be the keystones that can allow us a future to shape because a life without forests is unthinkable and unlivable. 

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AMERICA’S FIRST STEWARDS

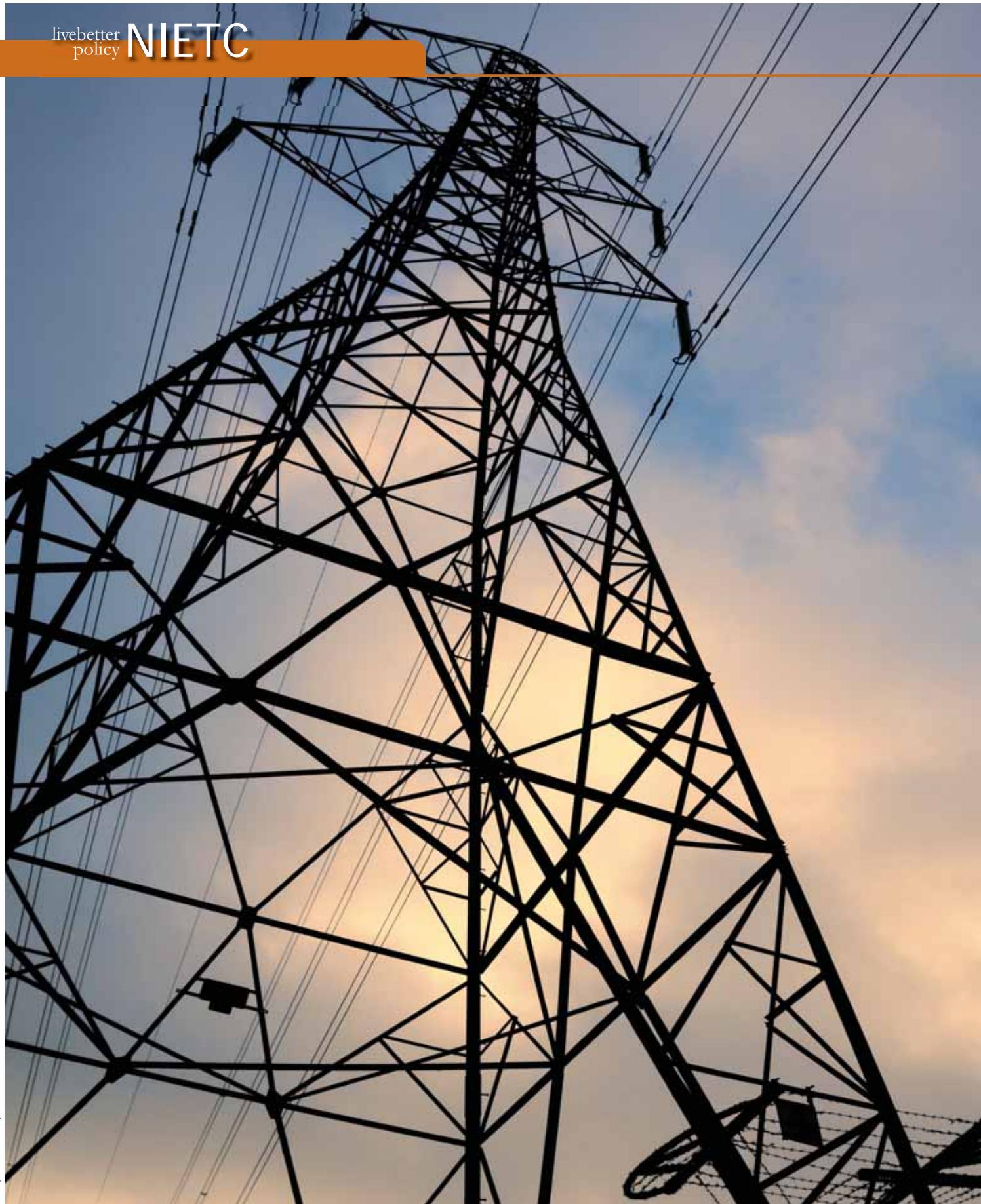
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"Coming Soon to a Neighborhood Near You.
Today the draft designations affect 11 states but the
next series include all or parts of 29 more states."
Obviously, these designations will leave only
10 states untouched.

Eminent Domain and the Violation of Rural America

PART ONE

A Rural Heart

Judy Almquist is a retired farmer and widow on a fixed income. The treasured

**"I've only got
50 acres here.
But it's what
I have...It's
all I have...this
is my land."**

memories of her life with her husband and their children are as much a part of the landscape of her heart as their rural Virginia farmland she still calls home. As she turns closer to 70, she thinks more and more about the importance of this legacy. "I've only got 50 acres here. But it's what I have; it's all I have," Judy said emotionally.

Despite the size or the sale value, Judy still confidently says, "this is my land."

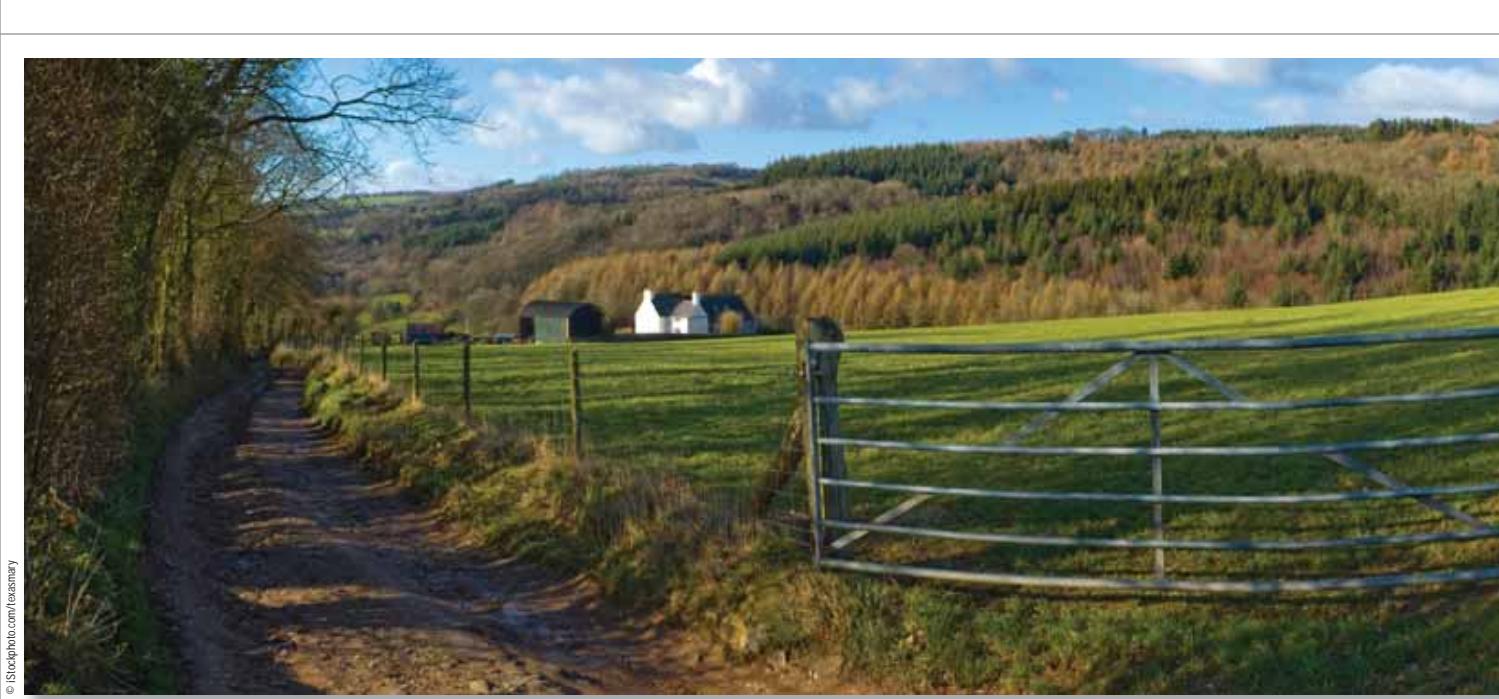
This landscape, though, a tract she plans to leave to her children, will change

if Allegheny Energy and Dominion Virginia Power have their way. Their proposed 500-kV Trans-Allegheny Interstate Line (TrAIL) will extend from Southwestern Pennsylvania (37 miles) to West Virginia (114) to Northern Virginia (28 miles) clear-cutting more than 7000 acres of coveted, forested land through state and federal conservation easements, historical lands, a National Forest, state parks, protected watersheds, wildlife reserves and thousands of landowners' homes. Allegheny Energy says this high voltage interstate power line is "necessary to meet the growing demand for power in the Mid-Atlantic region."

According to more than 90% of West Virginia residents who have sent letters to the West Virginia Public Service Commission, they do not agree. The same sentiment is being played out by residents in Pennsylvania, Virginia, New York and

every other state within the U.S. that is currently in threat of being compromised by Congress' latest misstep known as the "National Interest Electric Transmission Corridors" (NIETC).

When asked about her reaction to these proposed Corridors, Almquist, in a voice full of passion and fervor, was not at a loss for words. "It's not fair. It's not American!" Government seizing residential land via eminent domain never has been a well-received act, but to do so to benefit for profit self-serving electric companies is definitely not within the core tenants of a democratic society, especially those of the United States of America. This behavior might be excusable if there were no alternative to feeding America's growing energy addiction, but there is – and all these alternatives are healthier, greener, cleaner and more cost-effective.



The NIETC

What's really at issue here is the Department of Energy's (DOE) draft designation of the NIETC, legislatively mandated as a result of Congress' Energy Policy Act of 2005 (EPACT 2005). Congressmen Frank Wolf and Maurice Hinchey have been working feverishly to get Congressional support to rescind Section 1221 of EPACT 2005 which provides for these Corridors. According to a June 12, 2007 positioning statement by Wolf and Hinchey, these designations are "... 'Coming Soon to a Neighborhood Near You.' Today the draft designations affect 11 states but the next series include all or parts of 29 more states." Obviously, these designations will leave only 10 states untouched.

There is no doubt that the proposed Corridors incite much fury and they should, given their impact on hundreds of thousands, and possibly even millions, of American citizens throughout this nation. It's an issue that involves business-attired politicos, plaid-wearing farmers and suburban families, and well-manicured electric company CEOs.

At the root of this critical controversy are three main issues: private land ownership, the environment and national security. The latter, ironically, is a federal door that swings both ways: DOE Secretary Samuel Bodman says the Corridors are necessary to ensure national security; however, high ranking Department

of Defense (DoD) officials within the Pentagon maintain just the opposite. They say that the military will not participate in these Corridors not only because these proposed approximate 200 ft. high interconnected towers are a beacon for terrorist attacks on American soil, but also because "they are not sustainable."

Over the past few years, the DoD seems to have quietly migrated into one of the most pro-environmental departments, if not the most pro-environmental department, within the U.S. federal government. While Secretary Bodman continues to support ages-old coal-fired, CO₂ generating electricity, forward moving military services, such as the U.S. Air Force, are becoming the standard for green, clean and renewable energy generation, producing workable, non-polluting and cost-effective solutions to energy independence and national security.

A Historical Perspective: A Labyrinthine Policy

On April 26, 2007, the United States DOE, under regulations of Congress' EPACT 2005, determined that energy consumers specifically in the Mid-Atlantic and Western regions of the United States were "adversely affected by transmission capacity constraints."

In a May 2007 Arlington, Virginia, public hearing, one of the few public hearings the DOE planned to hold on this

critical issue, DOE representatives stated that they do not endorse nor condone any method proposed as a solution to alleviate these energy constraints. According to these representatives, the draft language and designation of these National Corridors is not a strict solution in and of itself; instead, these Corridors serve only to define the nature and scope of the problem while not enforcing nor proposing any specific solution.

...a further reliance on "dirty coal" for energy will only lead to an unstable future both in terms of climate and security.

Instead of proposing solutions, the DOE leaves problem-solving to the affected states, the Federal Energy Regulatory Commission (FERC) and to private industry – in particular, with respect to the Mid-Atlantic Corridor's high transmission power lines, PJM Interconnections, Allegheny Energy and Dominion Virginia Power. The Public Service Commissions of each state (gubernatorial appointees) have only interim, state-level authority because Congress gave the final authority to the federal government – the Federal Energy Regulatory Commission.

If any of the states in question, or FERC, approve the proposed siting current plan, the energy companies will, in essence, have the power and authority of eminent domain, allowing them to condemn private property for their use and profit.

Climate Change and National Security

When the DOE examined the "national interest" for increased energy demand, the organization said they never considered the means of energy production. In fact, these representatives said they focused on establishing areas of interest with the eventual goal of providing energy-addicted Americans, living in primarily densely populated areas, such as Washington, D.C. and New York City, with their "fix" for excessive energy use. The problem, then, exists in for profit electric companies, such as Allegheny Energy and Dominion Virginia Power, jumping on the National Corridor bandwagon, in some cases, almost a year before these draft designations were announced – before American citizens even knew this threat existed. Their solution is the proliferation and continued use of an archaic form of energy, manufactured via outdated coal fired power plants, known as "dirty coal" – the primary cause of human-induced greenhouse gases (GHG), which is the biggest contributor to global climate change.

These DOE spokespersons concurred with Bodman that the NIETC was needed as an issue of "national security." But, again, a recently released report by three and four-star retired Generals and Admirals says differently. To them, global climate change is the most pressing national security threat. Therefore, supporting this type of antiquated, CO₂ producing energy generation would actually be a national security threat, not a national security solution.

In fact, a further reliance on "dirty coal" for energy will only lead to an unstable future both in terms of climate and security. In May 2007, the Intergovernmental Panel on Climate Change (IPCC) released findings

that call for the world to reduce carbon emissions and GHG by 2015. These "dirty coal" fired high transmission power lines, to be developed by Allegheny Energy and Dominion Virginia Power and to be operational in 2011, would have an effective life span of 30-50 years – an obvious, disastrous step backward in curtailing global climate change, creating an obvious, blatant and total disregard for the welfare of the world's inhabitants.

Climate Change and Water Shortage

Global climate change and its myriad repercussions impact almost every aspect of human, plant and animal life. But one of the most detrimental results of global climate change will appear in a significant reduction of potable water, an obvious issue of survival.

Experts say that as sea levels continue to rise, coastal lands will be inundated with salt-water that will destroy the current, drinkable groundwater system. This devastation, however, would not be con-



tained at the ocean's coast. As water levels continue to change, the U.S. Geological Survey (USGS) projects that the salinity of salt water will encroach "on municipal water intakes from rivers." This will lead to a lack of drinking water in many parts of America and the world – a complete devastation to mankind.

Eminent Domain and the Loss of States' Rights: The Repercussions

Even if those states affected by the DOE's draft National Corridor choose not to approve Allegheny Energy's and Dominion Virginia Power's "dirty coal" fired high transmission power lines, the EPACT 2005 legislation connected with these National Corridors places the final authority for such transmission line siting within the hands of the federal government not the state government. This authority granted to the Federal Energy



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Regulatory Commission by Congress in EPACT 2005 is commonly referred to as the “Backstop Authority,” which allows energy companies like Allegheny Energy and Dominion Virginia Power to seek a federal appeal of a state’s denial of a transmission system.

This “Backstop Authority” is a new concept, never before used; however, if applied would undoubtedly guarantee excessive federal involvement in states’ rights, particularly with its power of eminent domain and its right to usurp the states’ transmission line siting authority, all for the benefit of for profit power companies. For the “Backstop Authority” to be used, a spokesperson for FERC stated that the transmission line in question must relate to a specific DOE national interest area and can be used if the state has either rejected or not acted on an energy company’s proposal within one year, which is why the draft designation of National Corridors is such a critical part of this controversy.

If any of the states in question, or FERC, approve the proposed siting, the energy companies will, in essence, have the power and authority of eminent domain, allowing them to condemn private property for their use and profit. This includes Judy’s property and hundreds of thousands of other farmers and rural land owners currently at risk. All of whom may have no recourse to save their property, their families or their livelihood.

The Nation’s Health

If eminent domain supersedes the rights of private land owners, America will suffer a devastating blow on its health as global warming continues, leading to adverse health conditions and worse.

In the immediate future, those who live near these high-voltage power lines will be at great risk. In fact, those with auto-immune disorders, pacemakers, metal heart stents and other implanted biomedical devices will be unable to live near such areas. This alone will effectively displace thousands of land owners from their own property, given the age and health conditions of the average farmer and rural land owner.

Recent reports from the United King-

dom have also linked childhood leukemia to close proximity of high voltage power lines. And the World Health Organization has classified high voltage transmission lines as a possible carcinogen. In addition, the California Department of Health Services has linked adult brain tumors, adult leukemia and miscarriages to similar, high voltage lines.

The Desecration of “America the Beautiful”

While health is of the utmost concern in regards to the proposed NIETC and these seemingly symbiotic high voltage power lines, America’s natural beauty is also under attack. The proposed transmission lines would cut across private property, public lands and protected state and federal conservation easements at a soaring, eye-sore height taller than the Statue of Liberty on Ellis Island.

The towers, approximately 200 feet above ground, are also slated to cut through Civil War battlefields, wildlife refuges, national parks and national forests – a non-green solution that would destroy the great, green grasslands and forests of America – an unspeakable tragedy for all Americans and also for the environment.

The Destruction of Rural America

Another issue of the proposed NIETC and these resultant transmission lines involves the loss of livelihood and legacy so strongly associated with land in rural America. Many potentially impacted farms and tracts of land have been family property for generations upon generations. For countless rural Americans, these National Corridor designations will destroy a way of life that has been the backbone of America since before becoming a nation.

In addition, it would destroy their livelihood and businesses as farmers may be less likely, and in many cases, unable (depending upon their proximity to these high voltage power lines) to raise the livestock and food needed to feed the nation. As an aside, those farmers in rural areas currently in need of a power line transmission upgrade would be able

to accomplish this via low transmission power lines powered by clean and green renewable energy, such as windmills. Low voltage power lines do not have the same devastating effects as high voltage power lines, allowing people to live closer to these lines without the same health and environmental implications.

And from a market perspective, high voltage lines will affect property values, creating economic devastation for tens of thousands of families. Judy Almquist’s property value will decrease by as much as 80% of its original valuation according to her appraiser. This is a bitter pill for an American woman entering the twilight of her life, who raised a family and buried a husband, and who always believed in the sanctity of her basic American rights.

The Poster Child for America’s Failed Energy Policy

The NIETC and Section 1221 of EPACT 2005 serve as the antithesis of America’s failed energy policy. In early June, President Bush announced that the leading contributors to global warming, including the United States, will need to submit solutions to curtail global climate change by 2008. Many in government, however, continue to disproportionately support the use of antiquated, CO₂ producing “dirty” coal powered electric generation rather than clean, green and renewable energy. At the same time, two of the easiest and least expensive energy solutions, demand management and education, are all but ignored.

According to recent reports in ScienceNOW, since January 2001 carbon emissions in America have increased by 10 percent. At the current rate, if the National Corridor designations are adopted, these numbers will continue to grow unchecked. This course of action will guarantee that the world’s climate change problems will not only continue, but significantly increase, putting America and the world at even greater risk.

If this continues, energy demand and generation are going to be the least of America’s problems. 

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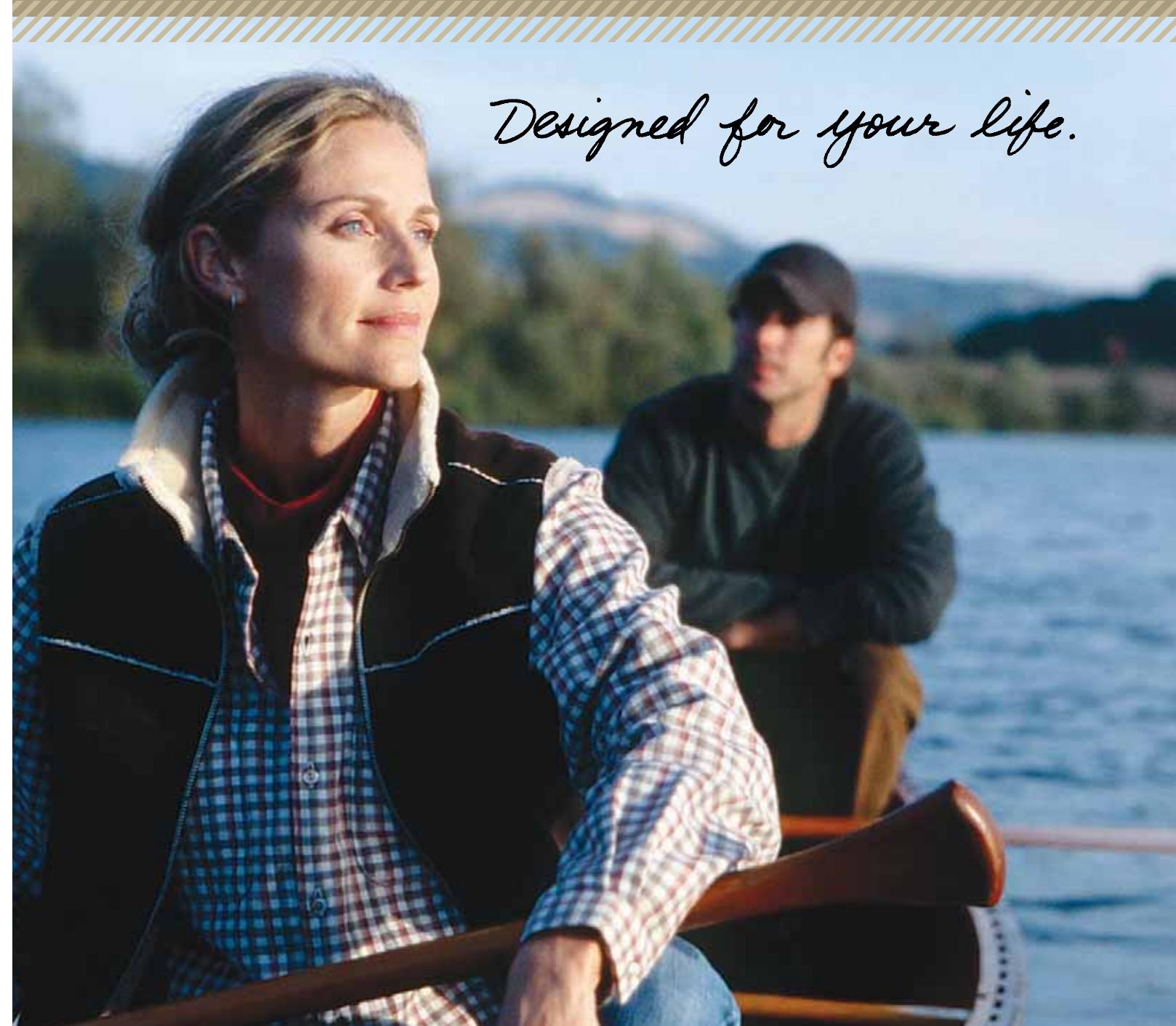
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Sustainability: A systems approach to a successful business model

Kermit the Frog once sang "It's not easy being green."

But that's not what businesses and government agencies are learning all across America. In fact, many are discovering that while going green requires fundamental changes in business practices, it is great for the environment as well as a driving force in what is now probably the most significant factor on the bottom line.

Roger Ballentine, president of Green Strategies, Inc. (www.greenstrategies.com), has much to say about the "green factor" and is uniquely qualified to express such an opinion not only as a former energy advisor to President Bill Clinton but also as the man who is greening Wal-Mart. Ballentine built his company around "the concept that as the world becomes more attuned to issues such as clean air, clean water, energy security, climate change and resource conservation, significant business opportunities will arise from the development of products and practices consistent with these values."

According to this green consultant, sustainability as a business approach is growing in popularity for two main reasons: First, for the most part, "companies want to do good and be good citizens." And just in case those weren't enough, he explained that companies are "also finding that this is a better way to run a business."

That "better way" is through sustainability – a systems approach to a successful business model – a business model that is gaining credibility and practice as the world faces the rising costs of energy, of global climate change and of the repercussions thereof. "This whole notion of sustainability is just a window . . . it's just a lens through which to look at a lot of issues that companies have traditionally looked at in different, non-environmental ways."

The Sustainable Business Approach

Ballentine learned much from his White House days; they shaped his current role as a sustainability consultant. Although the

Clinton administration's goal to combat climate change was paramount, the administration quickly realized that this goal would not be achieved through bickering.

Seated in his Washington, D.C. company

office, Ballentine explained, "We don't always have to be in this fight between what environmentalists want and what businesses want. If we're really going to solve a problem of this enormity, we aren't going to do it with business and environmentalists fighting. We're going to do it when we accept that this is good for business. It's good for the environment."

As companies have attempted to face the realities of complying with environmental regulations, they have made a discovery – not only can companies and the environment coexist; they can actually be synergistic.

One way to accomplish this goal is by adopting an environmentally friendly business approach. The current greening of industry experienced by businesses and consumers alike was not always a popular trend. In fact, for generations many industry insiders have believed that a successful business model must be separate from the environment.

"In the past companies saw environmental issues as problems for the company . . . threats to the brand or bottom-line cost issues," Ballentine said. "And, in kind of a defensive way, they started looking at 'how do we as a company better deal with these types of challenges?'" As companies have attempted to face the realities of complying with environmental regulations, they have made a discovery – not only can companies





and the environment coexist; they can actually be synergistic.

Being sustainable and environmentally friendly, in many cases, fits a simple adage: Using less energy saves more money for the company.

"Companies have gone through that process. And the best companies have begun to see that these environmental issues and, more broadly, the issues of sustainability have evolved from a business challenge to be managed to a business opportunity for increased value." Thus, this process grew from a mechanism of coping with a hindrance into a process of acceptance and evolved into the current process of good business practice. As Ballantine stated, it was a "transition from challenge to opportunity . . . and that, more than anything else, marked the transformation of business sustainability."

By adopting this new model of environmentally sound, sustainable business practice, companies made a discovery: the misuse, waste and abuse of energy consumption. Through status quo business practices and non-evolving building design and maintenance, "companies are finding that they are wasting a lot of energy. Many processes for industrial companies and general practices for administrative buildings include a tremendous amount of waste that can be squeezed out of the system," explained Ballantine.

When these disadvantageous practices are "squeezed out," inevitably, a company's environmental impact is reduced. In fact, as firms aim to decrease energy costs, they

begin to use fewer oil and petroleum products – a move by American business that leads to less reliance of foreign oil – a move that, Ballantine says, is welcome for a myriad of reasons. "That's good for international security. That's good for national security. That's good for the environment. And, it's damn good for the bottom line," he relates enthusiastically.

Being sustainable and environmentally friendly, in many cases, fits a simple adage: Using less energy saves more money for the company. "Companies have figured out 'hey, if I can use less energy, that adds to my bottom line,'" declares the former energy advisor. "It's a classic win-win situation."

This "win-win situation" is gaining ground on Wall Street – a positive sign for the greening of industry. "Investors and analysts are looking at these issues and seeing that they add value. And, correspondingly, they are looking with a more complimentary eye toward companies that are adopting sustainability. There's no single, better driver for corporate behavior than what the analysts on Wall Street are saying," explains Ballantine.

But it's not just Wall Street and business owners that are taking note. Employees are appreciating sustainable change. "Employees get very excited about a company that they feel is looking beyond the issues of the four squares of the company . . . they think that the company is doing really good beyond the company itself," he continues. Customers will seek out companies that are more environmentally friendly and as this takes place, profits increase and the environment is better for it.

"As we align those profit and value motives with larger, societal sustainability goals, which is what is happening right now, that's the big promise. That's when this will click on all cylinders, and we'll really fully

align stronger economic growth with better corporate citizenship and better sustainable values and a smaller environmental footprint," Ballantine said in a rush of excitement.

Customers will seek out companies that are more environmentally friendly and as this takes place, profits increase and the environment is better for it.

Companies are starting to notice that sustainability reaches beyond the shelves of their stores or packaging plants; it's a cycle. In fact, sustainability as a successful business model is not just linked to cutting costs for corporations and to using less energy; it's also about looking at the entire life of a product. "Companies are taking more of a life cycle view of their product," continued Ballantine. "It used to be that once the product leaves the door, the company is done with it and doesn't have any interest in taking any responsibility in that product going forward. I think they now understand that their products are still their products after they're sold, even after they're put into commerce."

As an example, he described the "life cycle" of a Coca-Cola bottle: "Coca-Cola sells their bottle of Coke, and they're done with it. But that used to be the old, non-sustainable approach to business. Well, they're not done with it because (when people litter) it's lying on the side of the road, and it still has their name on it. And, if it's sitting in a landfill, it still has their name on it. So I think a lot of companies are beginning to understand

this end-of-life notion of their products. Those products are always going to be their products; therefore, taking responsibility for that product throughout its life is important."

To coexist with this "life cycle" of products, companies are leaning toward innovation by designing products that are made of more recyclable and/or biodegradable materials. "Taking responsibility in a sustainable fashion for products beyond their useful life works its way back into the way that products are designed in the first place," Ballantine said. "And many of the products are then designed in a way that tends to be less energy-intensive, using fewer petroleum-based products. That reduces the environmental impact of the company A-to-Z, and it also has larger societal benefits. Fewer landfills are better than more landfills; less dependence on petroleum-based products is better for the country, and it's better for communities."

Wal-Mart, the U.S. Air Force and the Carpet and Rug Institute – Three Unique Approaches to Sustainability

According to Ballantine, Wal-Mart and its CEO were originally weary to shift its practices toward a greener future. In fact, Ballantine said that, like many corporations, Wal-Mart viewed environmental actions on its behalf as "purely defensive" – just trying to thwart off any problems.

Unlike other companies, though, Wal-Mart doesn't wear its "green" on its sleeve. "A lot of their customers don't even know about it."

But then a light bulb went off. "What quickly became clear was that sustainability wasn't about fending off problems; it was about seizing opportunities and adding bottom-line value. Now Wal-Mart has completely re-oriented and built its corporate vision around sustainability – because they think it's good business."

Some sustainable practices involve smaller packaging of items such as laundry detergent. Ultimately, this leads to less waste and to smaller forms of shipment and transportation – less CO₂. That's better for the environment, better for the bottom line.

Unlike other companies, though, Wal-Mart doesn't wear its "green" on its sleeve. "A lot of their customers don't even know about it," Ballantine said. "If you go into a Wal-Mart store, you may not even notice that the lighting in that store is 30 percent more efficient than the store's next door. You may not notice that they are harvesting daylight and that they have sensors on their lighting systems so when the sun breaks through the clouds, the lighting automatically goes down and when the cloud passes back over, the lighting automatically goes back up."

Through such sustainable practices, Wal-Mart is saving energy, but it's also saving something else – something that serves as a direct benefit to the corporation. "What else are they saving?" asks Ballantine. "They're saving money. And that's a good thing."

Ultimately, Wal-Mart has the goal of creating zero waste – a goal for which there is no current plan. However, to Ballantine that's what the sustainable business approach is all about because "that's what innovation is all about."

The "sustainability approach" to business isn't just practiced in the private sector. In fact, the United States Air Force has found that such business practices are vital in the public sector as well.

According to Major General (Maj Gen) Del Eulberg, The Air Force Civil Engineer, "Sustainability has many different definitions; but, from my point of view, sustainability is our ability to be able to maintain our mission capability both now and in the future. This, in essence, means we have to make sure that we conserve and maximize the limited resources that we have as a nation for future generations."

The price of energy has had an impact on companies' bottom lines as well as the Air Force's ability to conduct operations world-wide.

As an engineer, Maj Gen Eulberg looks at all aspects of sustainability with a particular focus on the synergy between the built environment and the natural environment. "Sustainability is a great concept when we look at our natural, as well as our built environment. How do we sustain both because that's what you're trying to achieve . . . the harmony between the built environment and the natural environment. Focus on one or the other can sub-optimize the potential solution set," he explains.

Maj Gen Eulberg has new policies in place that reinforce "green" planning and building "throughout the entire project life cycle that now embeds sustainability" from development of the concept through design and construction, as well as the operation of the facility itself thus ensuring a smaller footprint on energy (as much as a 39 percent savings on some projects). LEED Silver (the U.S. Green Building Council's Leadership in Energy and Environmental



"We have an aggressive program to go after renewable energy sources because it not only makes economic and environmental sense, but it also provides our installations essential energy security during times of crisis."

Design ratings) is the minimum requirement for all major construction projects in FY09 and beyond. In addition, Maj Gen Eulberg has established a Center of Excellence for Energy at the Air Force Civil Engineering Support Agency at Tyndall Air Force Base in Florida.

Lately, however, the Air Force Civil Engineer believes that the current emphasis on sustainability has increased for both the public and private sectors for a number of reasons, most notably due to the economic impact of energy. The Major General continues to explain, "The price of energy has had an impact on companies' bottom lines as well as the Air Force's ability to conduct operations world-wide. The increased price we pay for aviation fuel has limited our ability to accomplish other objectives because we have a relatively fixed budget. Increased fuel costs drive trade-offs in other areas such as training, research and development, recapitalizing our weapon systems or maintaining our aging infrastructure.

The price of energy continues to grow and limit options for us, as well as for businesses and for the American family. But it goes beyond just economics. There is also a growing understanding that energy has a strong environmental element as well as a national security component. The confluence of those three elements highlights the importance of sustainability regardless of whether you are in the private or public sector. All three areas of influence impact Americans' lives everyday. I think those three things moving together are really what have taken hold across our country."

But this attention on energy supply and demand is not new for the U.S. Air Force. Anyone familiar with this branch of the military service knows of its forward thinking and progressive, ongoing initiatives in

the purchase and use of "green" energy, energy conservation and the development of renewable energy. This aggressive approach has reduced Air Force energy usage by 30 percent between 1985 and 2005, providing \$2.9 billion in cost avoidance; and, they aren't slowing down. In fact, the Air Force is the government's No. 1 purchaser of "green power" and the No. 5 purchaser nationwide.

They are also an international leader in the development of renewable energy. "At Nellis Air Force Base we broke ground this past April on the world's largest photovoltaic solar array system – 14.2 megawatts – and that's a partnership with the private sector. We didn't use any taxpayer dollars," explains Maj Gen Eulberg proudly.

For those aware of his achievements and responsibilities, one would think the general was a CEO of a Fortune 500 company. In fact, his job is not dissimilar, given that he oversees 166 Air Force bases consisting of \$243 billion in real property with 700 million square feet of facilities world-wide.

But this CEO of sorts has a national security component that most corporate leaders never have to consider in their tenure. Maj Gen Eulberg continues: "We have an aggressive program to go after renewable energy sources because it not only makes economic and environmental sense, but it also provides our installations essential energy security during times of crisis.

In addition, our ability within the Department of Defense, as well as the private sector's ability, to develop renewable energy sources will make us less dependent upon foreign sources of energy, making

us more secure as a nation. And at the tactical level, the more protected our national infrastructure is, the more secure we become. The bottomline is that sustainable energy, with its national economic and environmental components, has become a key element of our national security considerations."

The Carpet and Rug Institute (CRI), the national trade association for the carpet industry, thinks sustainability is critical too. Its leaders have created a successful sustainability business model that is working wonders in the not-for-profit sector. CRI is a pioneer in developing new business approaches to sustainability. As a result, the carpet industry has an enviable record of being a leader in sustainable approaches for its manufacturing processes and practices.

It currently uses 70 percent less electricity and 46 percent less water per square yard of carpet produced than it did in 1990.

Over the past several years the carpet industry, through the Carpet America Recovery Effort, has been at the forefront of developing market-based solutions to diverting "old carpet" from landfills.

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According to Frank Hurd, vice president and chief operating officer of CRI, the need exists because “carpet does not biodegrade;” therefore, it does not go away.

It just so happens that sustainability is good for the planet, good for communities, good for the customers, good for their shareholders and good for their employees.

When presented with the challenge, the carpet manufacturers “eagerly jumped into” finding ways to reclaim post-consumer carpet to keep it out of our nation’s landfills. This is a model of voluntary action by an industry to address a real sustainable and solvable issue: how to recycle carpet. Innovative ways are being developed to turn old carpet into building materials and into auto parts, to refurbish old carpet into new carpet and to completely recycle old carpet into new carpet (www.carpetrecovery.org).

“Going green makes sense,” commented Hurd. “It’s not only important; it’s imperative.” Hurd said it’s so imperative that companies that don’t start moving in that direction “will not be profitable in the future . . . they will not be around. Any industry you can name is moving toward sustainability.”

For the carpet industry the movement of being more eco-friendly and efficient isn’t a trend with an expiration date.

It is Ballentine’s hope that more businesses and governments continue to move in that direction. In fact, he sees the future of business, government and the environment

as one. “It just so happens that sustainability is good for the planet, good for communities, good for the customers, good for their shareholders and good for their employees. That’s kind of the light-bulb moment going off throughout business. We’re really at a very exciting place right now, and this is happening before our eyes,” Ballentine commented enthusiastically.

As compact fluorescent light bulbs go off throughout businesses and within all segments of government, the future of sustainability has never been brighter. “You look at the number of companies now issuing their annual sustainability reports . . . it’s printed on recycled paper and it’s nice; and it uses soy ink and that’s nice. And they send it out to activists and environmental groups, and that’s wonderful. But I think we’re going to get to a point where there’s no such thing as an ‘annual sustainability report.’ There will just be an ‘annual report,’ and that annual report will be a ‘sustainability report.’ Sustainability

will be fully integrated into the core and the mainstream of what it means to run a business. Everyone will be sustainable. The company will be built around sustainability.

It's better business to be a better citizen. And it's better business to be more sustainable.

It’s better business to be a better citizen. And it’s better business to be more sustainable,” concluded Ballentine.

Simply put, maybe Kermit’s song wasn’t accurate. In fact, “green” has never looked better – for business, for government and for the world.

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1.

Green Carpet Is More Than a Color



Market segments have really begun to recognize the benefits of building green which is why it's no longer a trend; it is a mainstay. And carpet, carpet pads and carpet adhesives are contributing to green building in an important way – by helping to reduce volatile organic compounds (VOCs) and emissions. The Carpet and Rug Institute's (CRI) Green Label and Green Label Plus programs ensure that the lowest emitting products are being used in indoor environments. Likewise, CRI's Seal of Approval (SOA) Program identifies effective carpet cleaning solutions and equipment that clean carpet right the first time and protects the carpet investment. Not all products clean effectively. To find out more about these important programs, visit our website at www.carpet-rug.org

Eight Products you should Check out



4.

LG Tromm Laundry Washer and Dryer

LG has unveiled a new addition to its Tromm laundry line, the largest front-load washer available (4.0 cubic feet) for home use. Ideal for large families, it gives consumers the ability to wash more laundry – including bulky items such as king-sized linens – in fewer loads, saving time, water and energy. Its high spin speed of 1,200 RPMs helps to extract water from clothing for better drying efficiencies while still offering a quiet operation. The matching dryer features a FlowSense™ Duct Clogging Sensor which detects blockages in the ductwork that could reduce exhaust flow from the dryer. Alerting the consumer that the ducts need cleaning maximizes operating efficiency. The model numbers are WM2455 (washer) and DLE5955 (dryer). To find out more, visit our website at www.us.lge.com.

LG Electronics Inc.

2.

Garden Pear

Take the art of recycling into your garden by using the Garden Pear by Rainwater Management Solutions Inc. The Garden Pear allows you to recycle rainwater to water your own garden long after the rain stops. By recycling rainwater, you'll save on your household water bill and help the environment by reducing total water consumption. The 111-gallon Garden Pear, with hose for bottom connection, is frost-proof and connects to your downspout for easy installation. To find out more, visit our website at www.rainwatermanagement.com/products.



3.

Kitchen Compost Crock



With the Kitchen Compost Crock by Greenfeet.com, you can collect your kitchen scraps in a container that's pretty enough to display on your kitchen counter but is downright tough on odor. The glazed ceramic crock will not leak or drip and the inside is glazed as well to prevent stains and odors from forming, eliminating countertop mess while you're waiting to make your way to the composter. The 1.5-gallon capacity unit measures 11" tall by 7" wide and arrives ready to go with a charcoal filter (replacement filters are available as are biobag compostable bags for lining). Removable stainless steel handle makes it easy to carry to your composter. To find out more, visit our website at www.Greenfeet.com.

4.

LG Tromm Laundry Washer and Dryer



5.

Stainless Steel Waterfree Urinal

The new Falcon Waterfree stainless steel urinal provides unsurpassed performance and water savings in heavy-use bathrooms. The F-9000SS delivers unbreakable quality and design, while saving an average of 40,000 gallons of water per year. The contemporary style bowl is constructed of grade 304, 16 gauge stainless steel with matte finish to provide the ultimate level of durability. The F-9000SS urinal includes a patented cartridge with biodegradable liquid sealant which acts as a barrier to provide odor-free operation. With no flushing mechanism, the F-9000SS eliminates valve maintenance too – another key advantage over older, traditional flush style urinals. To find out more, visit our website at www.falconwaterfree.com.



6.

Warmboard

Warmboard is a healthier, environmentally conscious product that combines a structural subfloor and a thermodynamically sophisticated radiant panel into one simple component of your radiant heating system. Warmboard begins with a stiff, strong, 1-1/8" thick, 4" x 8" sheet of tongue and groove,



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7.

Surface Saver Reusable Protector Rolls



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8.

Country Log Cabins



Country Log Cabins (CLC), a sister company of Kuhns Bros. Log Homes, was born to continue the Kuhns family's same proud heritage, offering an affordable custom log home for cost-conscious consumers without sacrificing integrity, quality, value and service. Every item is carefully chosen; nothing is ever settled for. The Country Log Cabin Planning Kit features planning tools, their stunning 34-page portfolio and access to their exclusive web-based Design Series interactive program. These unique web-based designs are a collaboration of dreams and ideas with experience and skill, offering a starting point for your imagination to take flight. To find out more, visit our website www.countrylogcabins.com.

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In fact, in 2006, CARE kept 261 million pounds of post-consumer carpet from simply being thrown away — a 16% increase since 2005. And that's too important a fact to sweep under the rug. To learn more, visit www.carpetrecovery.org.



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supply of quality logs while protecting the forest habitat and natural resources such as streams and wildlife.

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Photograph: Bill Simone

Our Sustainable Doctrine of Discovery

Don Motanic, Umatilla Tribes
Technical Specialist, Intertribal Timber Council
American Indian Science and Engineering Society Fdn. Trustee

Scientists are undergoing a sustainable “ritual of discovery” and marking their territories by claiming “new” processes and procedures with their respective university’s or organization’s “flag.” Examples include “new” initiatives such as “ecosystem management,” “certified ‘green’ products” and “sustainable forestry.” “Discovery” implies symbolic possession and is continuously imbued with the attendant organization’s attempt to justify its “claim” or philosophy as the one true method – whether it’s green certification, carbon credits or the next bio-something – to save the planet.

Ironically, the Doctrine of Discovery was historically used by Europeans in much the same way to claim ownership over tribal lands throughout the continent. They accomplished this goal by claiming the land “terra nullus,” meaning that the land was not being used. Their obvious ignorance not only disrespected tribal values and culture but also epitomized their complete lack of any qualitative understanding of the value of land per se.

Hundreds of years later the same mindset continues as western culture identifies land with a value for a single generation or for even a few generations. For example, symbolic sustainable flags were “planted” in forests in the name of Gifford Pinchot. Yes, he did represent values and philosophies that were ahead of his time compared to the then-current European philosophies. However, these forward thinking



[...tribal values for their landscapes were developed over many generations...]

philosophies were still very backward when compared to millennia old American Indian philosophy. The “new American” values were developed by one person in one lifetime or in one generation; whereas, tribal values for their landscapes were developed over many generations and millennia.

Since the beginning of their existence, tribal people lived sustainably using this “terra nullus” land for hunting, gathering, grazing and spiritual existence. Names associated with each place within tribal lands relate to their unique value over many generations. For example, “Wallulapumpo” was the Walla Walla, Wash., tribal name which meant “the place where the wind blew the grass like waves.” If you were to ask 10 people to describe Gifford Pinchot’s single value, you would probably get 10 answers. However, if you asked a tribal member who understood the Walla Walla language about the value of his or her peoples’ place, you could ask someone 5,000 years in the past or future and the answer would be the same: “the place where the wind blows the grass like waves.”

It’s been many years since the first Europeans set foot on tribal land. Unfortunately, many organizations either continue to completely ignore tribal input or give some symbolic “Dear Tribal Chairman”

letter to ease their consciences. We could accomplish much more if we would move forward together by connecting tribes with governments and organizations; then we could develop “our (collective) doctrine of discovery.” One way to accomplish this goal is to organize forums or federally legislated committees consisting of state, tribal, county and municipal governments with multiple non-government organizations to be third-party monitors to the various resources under stress. In addition, we need to share and blend our western and tribal values and traditions to accomplish a value that will be understood 5,000 years from now.

Sustainable forums or treaty councils should be conducted much like the 1992 Rio, but we should also revisit and revise the European Document of

Discovery from 1492 by including and acknowledging indigenous peoples’ rights and by furthering these rights via the mutual creation of “our” sustainable doctrine of discovery. 

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