



IMAGES OF BIRDS DROPPING OUT OF THE SKY

and dead fish washing up on shore earlier this year had many concerned citizens wondering if the world was coming to an end. And though Americans on the whole may be more aware of environmental concerns than they were before the first Earth Day in 1970, the debate over whether the environmental movement has improved the state of the planet – and whether individuals can actually make a difference – rages on.

State of the Environment, Then and Now: Has Progress Been Made?

The environmental movement is certainly more institutionalized since it got into full swing more than 40 years ago, but is it any more effective? Has it made a difference? The following Environment by Numbers

- 4: The billions of pounds of toxic chemicals released in the US annually
- 4.5: Number of pounds of trash produced by Americans daily, double what Americans produced in 1960
- 5: Number of plastic gyres in the ocean to date
- 20: The number of years through which worldwide deforestation has increased
- 30: The percentage increase in ocean acidity as it absorbs CO2
- 65: The percentage of U.S. lakes that are seriously polluted
- 97: The percentage of scientists who attribute climate change to human CO2 emissions
- 100,000: Animals and sea life that die from consuming plastics every year

Climate Change

We start with the biggest and nastiest of the planet's problems in large part because it has a profound impact on so many other natural systems. Today, few doubt who's responsible for global warming. Ninety-seven percent of all scientists (who regularly research and publish on the subject) agree that climate change is a result of human-caused greenhouse gas emissions (GHGs).

Global levels of GHGs are currently so high many believe we've past the breaking point; that they're already contributing to increased droughts, more violent and unpredictable weather events, ocean acidification, species extinctions, sea level rises, increases in vector-borne diseases, and significant human health problems.

And if you think the problems are isolated in Africa and Asia, think again. Longer and more severe droughts are already a reality in the US. Droughts have big agricultural impacts, lead to reduced ground water and reservoir levels and quality, and cause shortfalls in water supplies.

Of course, one of the most profound causes of climate change is our burning of fossil fuels for energy in our homes and vehicles.

But despite all the green messaging and rising energy costs, we're no better at energy conservation. In the past few decades, as house sizes increased in America, so have household energy and water use patterns.

Land and Waste

Are we doing better on dry land? Unfortunately not. Deforestation rates and hectares of forest harvested every year have actually increased in the last 20+ years. And with deforestation goes biodiversity. Studies have shown that without the proper funding, listing animals and plants on the Endangered Species List can actually be more detrimental to their survival, leading many to question the efficacy of the program.

Equally as troubling is the fact that we dump more than four billion pounds of toxic chemicals in U.S. landscapes and waterways every year, many of which are carcinogenic.

Solid waste is also on the rise. Human populations in the U.S. grew by 65 percent between 1960 and 2005 while the amount of trash doubled to 4.5 pounds per person daily, indicating more waste is produced per household today than ever before.

Waterways and the Ocean

Water systems worldwide are in crisis. Of those assessed in the U.S., 44 percent of rivers, 64 percent of lakes, and 30 percent of estuaries are impaired, with industrial agriculture, mercury (primarily from coal power plants), PCBs, and pathogens the most common pollutants. Millions of Americans are exposed to water contaminants every year.

Unfortunately, the problems aren't limited to fresh water systems. Climate change is contributing to worldwide ocean acidification as CO2 is absorbed by our seas. With an increase in ocean acidity of 30 percent to date and predictions of it doubling by 2100, there will be significant impacts on fishing, coral health, tourism, and more.

And remember the trash on land? Well, it doesn't always stay where it's put. Scientists estimate that there are now five plastic oceanic gyres worldwide - giant swirling masses of plastic waste. The infamous

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Pacific Ocean Garbage Patch contains approximately 46,000 pieces of plastic litter per square mile of ocean - six pounds of marine litter for every single pound of plankton. Every year, 100,000s of sea birds, sea turtles, whales, and other marine mammals die from consuming or being strangled by this plastic trash.

Any Good News?

Thankfully, yes, there are some glimmers of hope:

- Recycling rates have actually increased to about 1 pound per person per day due in large part to the increase in curbside recycling programs - there was only one such program 20 years ago but today there are thousands.
- Air pollution has been reduced in many areas of the U.S., with significant reductions in atmospheric pollutants such as particulate matter, sulfur dioxide, lead, and ozone.
- More than 250 sites have been removed from the U.S. Superfund list (1,300+ remain on

the list to date) as a result of being remediated or shown to pose no threat to the public or environmental health.

- Though fuel economy standards introduced in 1975 largely stagnated for 35 years, President Obama has introduced legislation to raise the fuel economy of new vehicles to 35 mpg by 2020. This should help Americans reduce their consumption of oil a great deal and go a long way to reducing overall greenhouse gas emissions as a nation.
- Americans are (or at least claim to be) making efforts to increase recycling, reduce energy consumption, and buy greener products.
- The Earth Day Network, a worldwide group spanning 174 countries, formed out of the American Earth Day movement. Today it organizes people to campaign for environmental causes and hopes to have a total green international action list close to one billion in 2011.

Why the Environmental Movement Lags

Activities that would make the biggest difference:

volunteerism, environmental donations, and active expressions of environmental concern to politicians and business owners, are on the downturn. Many individuals have chosen instead to engage in what is being called slacktivism - doing feel-good activities that have limited impact such as internet petitions, wearing bracelets or ribbons, joining a Facebook group, or sending mass emails.

More importantly, perhaps, is the fact that on the whole, consumers are less invested in the environmental movement than ever before. In 2010, there was a 10 point drop in sympathy toward the environmental movement compared to the last 10 years, with a 10 point increase in those unsympathetic toward it as well. And those that believe the environmental movement is doing more good than harm are fewer too; down 13 percent compared to the year 2000.

Why exactly is the environmental movement lagging?

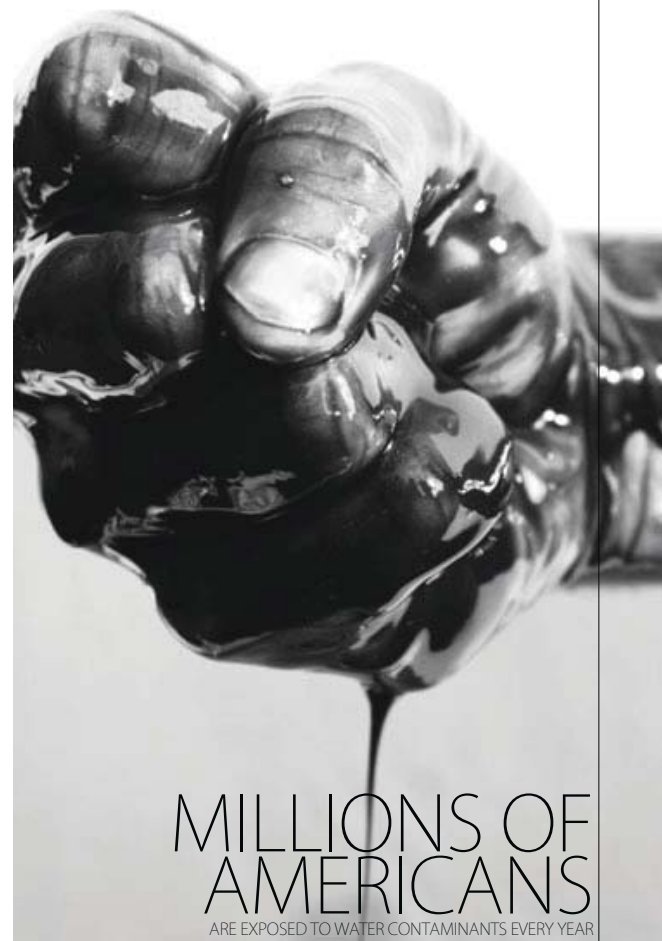
- Environmental issues today are less tangible. Think toxic water versus acidified oceans and air pollution versus climate change;
- Green politicians have had limited success in policy issues, leaving to widespread green ennui;
- The slow economy means lower levels of concern for nebulous environmental problems;
- With the exception of a few bright spots (350.org for instance), environmental groups have failed to harness new media (Facebook, Twitter, texting, and the like) to the same level as those spreading an anti-environmental message.

Perhaps the deadliest blow to the green movement has been the growing polarization over environmental issues in the U.S. This has been caused primarily by massive anti-environment lobby spending. Consider that since the removal of constraints on corporate spending for political campaigns, between 1990 and 2008, the energy sector outspent the environmental sector by a factor of 20:1.

Can Individuals Really Make a Difference?

Depressed yet? Hopefully not. Some of the greatest minds - scientists, business leaders, and politicians, alike - see the ever-inventive human spirit as a powerful resource that has yet to be tapped to its fullest to solve these massive environmental problems.

Individuals worked together through grassroots environmental collaboration to create the future they hoped for on that first Earth Day, and there's no reason why we can't do the same. So why not use your own personal creativity to shrink your mark on the planet?



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ARE EXPOSED TO WATER CONTAMINANTS EVERY YEAR

- Go beyond slacktivism by writing a letter or giving your political representative a call and letting them know how serious you are about environmental protection.
- Volunteer for your favorite environmental organization - whether it's cleaning up your local beach, providing eco-education to school kids, or planting urban forests. Get movin'!
- Start your own green movement. If no one is solving an environmental problem in your community, find a way to get it done yourself.
- Be smart with your green dollars by donating to green charities, buying environmentally preferable products, and supporting eco-minded politicians.
- Green your lifestyle by committing to reach a tangible reduction in energy and water consumption, trash production, and recycling rates at home and at work.

LIGHTING CHINA THROUGH EARTH



by Debbie Hall as translated by Rocky Nash

Li Zhang, CEO of Sun For Light/SUNFOR, in China and a member of Rare Earth Association of China, has been engaged in the research, production and manufacture of rare earth luminescent materials and LED lighting since 1998. However, the events of 9/11 truly affected and motivated Zhang.

"(During the attacks at) the World Trade Center in the United States, there were many lives saved before the building collapsed," Zhang said. "The reason is the luminescent materials to guide people (so they could) find the direction in the dark."

According to SUNFOR, LED lighting saves 80 percent more energy than that of incandescent lighting. LED lights are also known for their extensive life span, luminosity, and low heat emissions which have been shown by research to be safer and more cost effective for consumers.

SUNFOR is "the leading enterprise in rare earth luminescent materials and LED lighting," Zhang said. "We adhere to the independent research and development of rare earth products and also maintain our own core patent technologies and products. This showcases the excellent enterprise of using rare earth materials in China."

According to Zhang, if China were to use LED lighting exclusively, 400 billion kilowatts would be saved every year, which is equal to saving 1.4 billion tons of standard coal and

600 billion cubic meters of pure water and reduce 10 million tons of carbon monoxide from being released into the air. Zhang said that if the usage of LED lighting were to be implemented all over the world, it would make an even greater contribution to protecting the environment.

"Environmental pollution is a serious concern in China. It is not only a Chinese issue though, but a subject that concerns the entire world. So arises the need for the efforts of caring people throughout the world. This is my view. China's rare earth mining should strengthen environmental protection, improve the comprehensive utilization rate, and prevent the further pollution," Zhang said.

"The energy conservation initiative in China has just started so we need support from countries like the United States on improving technology and products. *Creating a greener earth is a global responsibility,*" he continues. "I and my company are adhering to energy-saving environmental protection work in China, and we will continue to do it. SUNFOR invites other countries to join us in their efforts for a greener world."

SUNFOR has been awarded China's Top Ten lighting brands award and continues to impact its country.

For more information, visit sunforlighting.com or sunform.com.cn.

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BEYOND BRICK AND MORTAR BUILDING GREEN

by Debbie Hall



The Venetian Las Vegas and The Palazzo Las Vegas



The lobby at The Palazzo Las Vegas



in areas such as energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, protecting resources and understanding an impact on the environment as a whole. LEED certification covers all phases including design and construction, operations and maintenance, tenant fit out, and significant retrofit. Buildings can qualify for four levels of certification including certified, silver, gold and platinum.

The Las Vegas Sands Corp., international developer of multi-use integrated resorts, launched its Sands Eco 360° (degrees) Global Sustainable Development program in 2010. The company's Venetian Resort and Sands Expo and Convention Center in Las Vegas have achieved LEED certification for Existing Buildings Gold by the U.S. Green Building Council. The combined Venetian, Sands Expo, and Palazzo Las Vegas, which in 2008 received LEED New Construction Silver certification, now comprise the largest LEED building in the world.

"The launch of Sands Eco 360° demonstrates our commitment to sustainable development and operations. Clearly there are important business advantages to operating in a sustainable manner, but when sound business practices are married with sustainable efforts that benefit the environment and our communities, the impact is immeasurable," said Michael Leven, president and chief operating officer of Las Vegas Sands Corp. He said different aspects of the program are not only implemented in the company's U.S. properties, but are also part of its operations in Macau and Singapore. All future Las Vegas Sands Corp. properties will comply with Sands Eco 360° principles and standards.

There are now LEED Platinum-rated projects in 15 other countries as of January including Australia, Brazil, Canada, China, Finland, Germany, Great Britain, India, Saudi Arabia, South Korea, Spain, Sri Lanka, Sweden, Thailand, and the United Arab Emirates.

The Living Building Challenge, created in 2009 by the Cascadia Green Building Council as an international green building rating system, is part of the International Living Building Institute, a nonprofit organization dedicated to the creation of sustainably-built environments. The Cascadia Green Building Council is named for the Cascadia bioregion, which covers land that drains to the Pacific Ocean through the temperate rain forests. Cascadia promotes the design, construction and operation of buildings that are environmentally responsible, profitable and healthy places to live and work throughout Alaska, Washington, Oregon and British Columbia, Canada. Incorporated as a nonprofit organization in December 1999, and incorporated in British Columbia under the Society Act in 2008, Cascadia is one of three original chapters of the United States Green Building Council. It is also the largest chapter of the Canada Green Building Council with a chapter active in Ireland.

While the efforts might have begun almost 20 years ago, it is fitting the seeds planted then have grown into a viable movement today in the building industry where color of brick and mortar is green.

Today a dichotomy exists affecting the construction industry. In a sluggish economy, the building industry has been downsized with a glut of available structures, both residential and commercial. However, the growing awareness to recreate our world as energy-efficient and environmentally sound has created an unprecedented demand for eco-friendly buildings.

Ironically, it was in the 1990s when various organizations were created to monitor, promote and mentor the green movement. In 1992, the U.S. Environmental Protection Agency introduced ENERGY STAR as a voluntary program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions. In 1996, EPA partnered with the U.S. Department of Energy to expand and extend the label to cover new homes and commercial and industrial buildings.

Developed by the U.S. Green Building Council in 1998, the Leadership in Energy and Environmental Design, known as LEED, is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies aimed at improving performance

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