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Earth Day

Earth Day has a very interesting history that everyone should know about. People worldwide should also be more involved in it because of its wonderful purpose, and the



many things you can do to help the environment. It is remarkable that earth day is still making an impact today on the United States as well as in the entire world. It is amazing that a day for cleaning a country that originated more than thirty years ago is still around today.

Senator Gaylord Nelson was the founder of Earth Day. Earth Day's main idea was conceived over seven years starting in 1962. President Kennedy focused on highlighting environ-

mental issues by promoting Earth Day. The President went around the country talking about how to keep our nation clean while congress accepted the idea of an "earth day". The plan worked and people started talking about cleaner rivers and air. The first Earth Day was celebrated on March 21st 1970.

The purpose of Earth Day is to help keep the grass green and the skies blue with more trees and less pollution. Thanks to this celebration, nowadays, people are more concern about taking care of the environment. They are aware of what they are actually doing when they throw a candy wrapper or an empty can out the window, or leave their Styrofoam cup sitting on the sidewalk. Keeping the national parks clean is another concern of Earth Day, volunteers go out to clean national parks such as Yellow Stone on Earth Day so that foreigners don't think that all Americans are unconscious. Most of all, Earth Day is a way to restore patriotism in the entire citizens' hearts; throwing a cup on the sidewalk says that you have no respect for your country, please do. Earth Day has many purposes that people should know about and stay involved in.

There are many things that you can do on Earth Day or any day to ecologically help your country. Recycling is an easy thing to do and most people have a recycling can outside their houses, so why don't use it?. Volunteering to clean roads and sidewalks is another great way to help out the environment. If you could ride your bike or walk to work once or twice a week it would make a difference. Carpooling on the way to school, or to work, or just to a baseball game is another way to help out our environment, and also get minimal traffic congestion. By not using harmful aerosol cans





like hair spray and spray paint, you are not wearing out the ozone. By wearing green on April 22nd you show that you are supporting Earth Day. Finally, stop the litter before it starts, if you don't litter nobody will have to pick it up. These are just a few of the many things you can do to help out on Earth Day and every day.

Be supportive with Earth Day; think of all the things that the earth has done for you and go and do something for it. Be helpful, and if there is anything you can do for the earth, do it. Don't let anybody stop you. If you are busy or you are just too lazy please show that you support Earth Day by being conscious of the problem or teaching kids about the consequences of neglecting the environment. The Earth day is something you should be more involved in and know more about because there are many things for you to do, it is a good purpose, and it has a great history.

Earth Day 1970 Turned That All Around

On April 22, 20 million Americans took to the streets, parks, and auditoriums to demonstrate for a healthy, sustainable environment. Denis Hayes, the national coordinator, and his youthful staff organized massive coast-to-coast rallies. Thousands of colleges and universities organized protests against the deterioration of the environment. Groups that had been fighting against oil spills, polluting factories and power plants, raw sewage, toxic dumps, pesticides, freeways, the loss of wilderness, and the extinction of wildlife suddenly realized they shared common values.

Earth Day 1970 achieved a rare political alignment, enlisting support from Republicans and Democrats, rich and poor, city slickers and farmers, tycoons and labor leaders. The first Earth Day led to the creation of the United States Environmental Protection Agency and the passage of the Clean Air, Clean Water, and Endangered Species acts.

Sen. Nelson was awarded the Presidential Medal of Freedom -- the highest honor given to civilians in the United States -- for his role as Earth Day founder.

As 1990 approached, a group of environmental leaders asked Denis Hayes to organize another big campaign. This time, Earth Day went global, mobilizing 200 million people in 141 countries and lifting the status of environmental issues on to the world stage. Earth Day 1990 gave a huge boost to recycling efforts worldwide and helped pave the way for the 1992 United Nations Earth Summit in Rio de Janeiro.



Participant in Earth Day, 1970.
Photo: EPA History Office

As the millennium approached, Hayes agreed to spearhead another campaign, this



EPA Administrator William K. Reilly with former Senator Gaylord Nelson, Earth Day 1990. Photo: EPA History Office

time focused on global warming and a push for clean energy. Earth Day 2000 combined the big-picture feistiness of the first Earth Day with the international grassroots activism of Earth Day 1990. For 2000, Earth Day had the Internet to help link activists around the world. By the time April 22 rolled around, 5,000 environmental groups around the world were on board, reaching out to hundreds of millions of people in a record 184 countries. Events varied: A talking drum chain traveled from village to village in Gabon, Africa, for example, while hundreds of thousands of people gathered on the National Mall in Washington, D.C., USA.

Earth Day 2000 sent the message loud and clear that citizens the world 'round wanted quick and decisive action on clean energy.

Now, the fight for a clean environment continues. We invite you to be a part of this history and a part of Earth Day. Discover energy you didn't even know you had. Feel it rumble through the grass roots under your feet and the technology at your fingertips. Channel it into building a clean, healthy, diverse world for generations to come.

Taken from: <http://www.earthday.net/node/77>

Climate Crisis Brings New Opportunities, Expert Says

“No person is too small to make a difference,” says Jonathan Pershing

By Karin Rives
Staff Writer

Washington — Every person willing to do something to address the global problem of climate change can have an impact, the U.S. Department of State’s [deputy special envoy for climate change](#) said April 7.

Governments — and businesses that know to take advantage of emerging clean-energy markets — can also make a difference, said Jonathan Pershing in a Global Conversations climate webchat. Speaking to participants from across the globe, including university students in Brazil, China, India and the United States, Pershing said switching to a mostly carbon-free society will cost enormously in new infrastructure and technology investments.



By signing the December 2009 Copenhagen Accord, developed nations signaled their intent to spend \$100 billion annually by 2020 to reduce global greenhouse gas emissions and help developing nations adapt to climate change. Seventy-five nations have signed the agreement so far and submitted emission reduction targets, setting the stage for a legally binding climate agreement perhaps as early as this year. Together, these nations account for 80 percent of the world's energy-related greenhouse gas emissions. However, the climate change challenge and towering costs also bring opportunities for involvement at every possible level, Pershing said.

“It can be as small of a thing as paying attention to whether the lights are left on, or paying attention to the consumption that you as an individual, and that your family and your community has,” he said. “We can reduce the size [of the carbon footprint] no matter where we stand.”



Individuals can also reach out to government leaders and academic institutions with an interest in climate change and ultimately push for social change.

“Find out what they're doing, engage with them, and contribute your ideas about how you can move something forward. And collectively that will begin to change the policies of government ... and behavior of society, which is what's required,” Pershing told the students. “This is a problem that is both local and global, and both sides of that equation have to engage.”

The search for cleaner energy is an opportunity for businesses as well, many of which have already taken advantage of new markets for renewable energy and alternative technologies. Going forward, Pershing predicted, such markets will only grow. The current global fleet of wind power generating stations needs to expand 750 times to slash carbon dioxide emissions by one gigaton. In all, seven gigatons of carbon dioxide must be trimmed to reduce emissions by 50 percent by 2050 — the level required stabilize the climate.

Another gigaton would be achieved if the world's 1 billion cars were switched to vehicles that get 40 miles per gallon (17 kilometers per liter). Any carmaker looking at options for growth could find huge investment potential developing these vehicles, he said.

“Climate change need not be only a negative,” Pershing said. “Managing the impacts clearly is something we have to do, but the shifts in economy, the opportunity for technology, for investment, for global jobs, for development is substantial.”

Taken from: <http://www.america.gov/st/energy-english/2010/April/20100408122852KseviRO.1749231.html?CP.rss=true>

Very Small Offers Big Cleanup Potential

EPA scientists are exploring ways to use some very small materials to clean up some very big environmental problems. Research chemist Dr. Souhail Al-Abed and his colleagues have synthesized activated carbon with nanoparticles of iron/palladium bimetallic to produce a new nano-scale treatment to clean up pollutants. The new, tiny technology is offering promise where conventional technologies have been limited in detecting, treating, removing, and preventing environmental contaminants.



The research is proving particularly useful in dealing with PCBs, a family of persistent organic chemicals that have been linked to a host of dangerous health effects, including cancer. Dr. Al-Abed and his research group found that infusing the carbon with nanoparticles not only made it more effective at adsorbing contaminants, but also degraded the PCBs to less harmful compounds.

The carbon by itself is small and porous, making it effective at trapping and isolating PCBs. This means there are lots of spaces between the granules in the same way there are lots of spaces between pebbles in a pail. The more spaces, the more surface area is available for adsorption or chemical reactions. Infusing the activated carbon with the nanomaterials made it even more powerful as a cleaning technology and offers great promise in improving EPA's efforts to clean up sites contaminated with compounds such as PCBs.

"On the basis of our observations, a new strategy and concept of a 'reactive' cap/barrier composed of reactive activated carbon was proposed as a new environmental risk management option for PCB-contaminated sites," explains Dr. Al-Abed

Results of Dr. Al-Abed's work, published in the January 2009 issue of *Environmental Science and Technology*, are leading to some innovative practices in pollution control. For example, EPA is developing caps, or barriers, that contain and degrade PCBs during remediation, both at the contaminated site and the surrounding area to which contamination has spread.



Dr. Al-Abed is a research chemist at EPA's National Risk Management Research Laboratory in Cincinnati, Ohio. The paper by Dr. Al-Abed and colleagues, first published online in 2008, received a 2nd runner-up award for best technical paper of the year by the Environmental Science and Technology editors based on the expectation of its impact in the field.

Dr. Al-Abed's research has contributed to our understanding of many challenging environmental problems and to the development of cleanup strategies. His research activities include:

- Using electrochemical methods and bimetallic nanomaterials in the remediation of contaminated soils and sediments.
- Removal of heavy metals from aqueous waste streams.
- Development of methodical leach tests for waste evaluation

Taken from: http://www.epa.gov/ord/sciencenews/scinews_nanomaterials.htm



It takes a liter of water to produce a calorie of food, or, at least several thousand liters of water for every person, every day. The water required to grow the food we eat is some 70 times greater than the water we need to drink, bathe and wash. Over the next 40 years the global demand for food is expected to double, and that implies that the amount of water used to achieve global food security would also have to double. Already today, a third of the world population is affected by water scarcity. Climate change is expected to worsen water problems by increasing the frequency and severity of floods and droughts.

Water and Climate Change



From droughts to flooding to severe storms, people around the world are feeling the negative effects of climate change on water resources. Water and climate change was an important topic at the December 2009 U.N. Climate Change Conference (COP-15) in Copenhagen, Denmark, where it was agreed that “the impacts of climate change will be felt through water.”

A man takes his buffalo to drink in a nearly dried-up pond in China’s Yunnan province. As temperatures rise due to climate change, water evaporation will increase, leading to droughts and the loss of arable land.



Not only are droughts a growing problem, but flooding due to climate change is also increasing. Rajendra Pachauri of the U.N. Intergovernmental Panel on Climate Change (IPCC) has warned that during the next 70 years, 2 billion people will live in flood-prone areas.

The effects of climate change on water have led to shrinking seas, such as this dried-up port in Aralsk, Kazakhstan, formerly a fishing port and harbor on the Aral Sea. In the last 30 years, more than 60 percent of the Aral Sea has dried up.



Increasingly, people around the world face a scarcity of drinking water due to climate change. In developing nations, food security requires a focus on opportunities for the poor. Particularly helpful will be initiatives that help the needy grow food and generate income. These might involve low-cost drip irrigation; rainwater harvesting; or multiple-use water projects that afford households water to drink and bathe in and for backyard gardens and tending livestock, such as these goats being herded across a dry reservoir.

California, where a dead almond grove stands in the San Joaquin Valley, continues facing dire water supply issues, with 2007 ranking as a record dry year in some regions. According to the Association of California Water Agencies, the collective impact of drought, climate change, increased population demands, court-



ordered supply reductions and potential natural disasters means that conservation will not solve the crisis.



Australia, where a farmer stands in a dry riverbed at Gunnedah, recently has been devastated by climate-related floods, droughts and wildfires and is facing critical urban water shortages. The city of Perth is augmenting supplies using wind-powered desalination plants while government-driven water reform seeks to change habits and bring water use in line with the country's decreasing water availability.

The problem of droughts is closely connected to a decrease in food security and health as farmlands dry up, food production stagnates and people lose access to fresh water. As farmers lose their land and livestock to drought, they lose their livelihoods as well. Here, an Australian farmer looks out across his barren land.



While some parts of the world will experience decreased rainfall and drought, others will experience intense tropical storms, hurricanes and floods that have the potential to be more destructive than those in the past.

Climate change has thrown off the patterns, frequencies and intensities of storms, floods and droughts. It is getting harder for scientists and water managers to predict how best to build infrastructure, from gutters to dams, that will withstand the growing severity of storms.



The melting polar ice caps will lead to rising sea levels and increase the likelihood of coastal flooding. Additionally, saltwater from the flooding could mix with fresh water, making fresh water supplies nonpotable

Climate change will cause snow fields and glaciers that feed into rivers to melt faster, leading to floods and rapidly decreasing water reserves in the glaciers. Those living downstream no longer will be able to rely on a steady flow of water and will have to find ways to conserve and store water for the dry season. The main source of the Ganges River, where workers are collecting silt, is the Gangotri glacier in the Himalayas, which has receded by nearly 915 meters in the past 25 years.





Rising sea levels and resulting erosion leave coastal areas more vulnerable to the effects of floods while increasing the pressure on infrastructure, water supplies and natural resources.

The intersection of climate change and water has profound effects on lives around the world. People are losing drinking water, farmland and food and becoming more vulnerable to floods and other effects of intense weather. Drought in central Java, Indonesia, led this woman to struggle to find water in a dried lake.



Taken from: <http://www.america.gov/multimedia/photogallery.html#/14900/water/>

Useful Tips and Resources on Earth Day

The United States Environmental Protection Agency (EPA), leads the nation's environmental science, research, education and assessment efforts. The mission of the Environmental Protection Agency is to protect human health and the environment. Since 1970, EPA has been working for a cleaner, healthier environment for the American people.

On Earth Day: Take Action; choose at least 5 actions you'll commit to protect the environment. By choosing at least 5 actions you'll commit to. Use less water and electricity, commute without polluting, reuse and recycle, and more:

Visit <http://www.epa.gov/EarthDay/take-action.html>

The following are recommended web links by EPA:

[Ground Water and Drinking Water](#)

This is the home page for the Office of Ground Water and Drinking Water and provides information about the programs in place to protect public health by regulating ground and drinking water

[Local Drinking Water Information](#)

Provides local drinking water information for each state

[Drinking Water and Health: What You Need To Know](#)

This publication addresses locating information about your drinking water system

[Office of Air and Radiation](#)

The Office of Air and Radiation oversees the air activities of the Agency including national programs, technical policies, and regulations

[The Plain English Guide to the Clean Air Act](#)

Guide to the Clean Air Act in plain English

[Environmental Monitoring and Assessment Program \(EMAP\)](#)

Data, metadata, data set descriptions and documents from EPA`s Environmental Monitoring and Assessment Program

[Ecological Research Program](#)

Provides information on research conducted by the Ecological Research Program to identify, quantify and assess the goods and services of ecosystems

[Electronic Report on the Environment \(eROE\)](#)

Presents the best available indicators of national conditions and trends in air, water, land, human health, and ecological systems

Resources for Teachers and Students



EPA has put together a collection of websites and documents that you can use to explain environmental topics. These resources offer basic and clear information to assist you in teaching your students about the environment.

» <http://www.epa.gov/teachers/teachresources.htm>

» <http://www.theteacherscorner.net/seasonal/earth-day/index.htm>

» <http://www.nasa.gov/audience/foreducators/index.html>

» <http://www.nasa.gov/audience/forstudents/index.html>

E-journal Climate Change Perspectives

» <http://www.america.gov/publications/ejournalusa/0909.html>

E-journal Climate Change Perspectives in Spanish

» <http://www.america.gov/esp/publications/ejournalusa/sep09.html>

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