

WITH EYES TO SEE



THE MANY FACES OF GLOBAL WARMING

On Monday, October 27 of this year, the government of Guatemala declared a state of emergency in northern Guatemala as a result of serious flooding. More than a half a million people have been affected by the water, and many of these are in the municipality of La Libertad where Concern America has operated a community-centered health project for 15 years. One of the hardest hit communities is the town of Las Cruces where 7,000 of the 12,000 residents have been forced from their homes, and many of them have lost everything they own. Unfortunately, Concern America's project center, located in Las Cruces, was also flooded, and most of the medicines, medical equipment, one-of-a-kind health teaching materials, furniture, etc. were lost. (Visit www.concernamerica.org for more information)

Sound familiar? Replace the country of Guatemala with Indonesia (tsunami), Pakistan and China (earthquakes), the Gulf Coast (Hurricane Katrina and others), etc., and the list of devastating natural disasters in recent years is unfortunately too long to list on this page. Yet, the categorization of such catastrophes as purely "natural disasters" has been disputed in each of these and related events: the storms and tectonic shifts are certainly "of nature," but their frequency, intensity, and ultimate effects were too often exacerbated by human actions (or lack thereof). In Indonesia, a lack of adequate warning systems meant the tsunami hit most communities completely by surprise; the poorly maintained levees and the destruction of coastal swamps (nature's water-overflow systems), among other elements, helped lead to the flooding of New Orleans; a newly "improved" road cutting through the town of Las Cruces essentially created an unintended levee that led to flood conditions this year where previously none existed before.

The climate changes taking place at this time are turning many natural systems on their heads and reversing trends that have been in place for thousands of years. What are some of these changes? How are these changes affecting our own state, our own city? This edition of *With Eyes to See* will look at the many faces of Global Warming and its effects on Sea Levels, Agriculture, Health, and Weather, with information, links to resources, and classroom activities.

ideas for
teachers

who want
to
integrate
social
justice
concepts

into what
and how
they teach

Winter
2008

CONCERN AMERICA

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Reference

The Many Faces of Global Warming, Region by Region

The changes our world is experiencing/will experience due to Global Warming are many. Rising temperatures affect precipitation, storms, wildlife, vegetation, sea levels, etc., all of which have a profound effect on the lives of people the world over. However, we are not all affected equally. It is estimated that between 1990 and 1998, 94% of the world's 568 major natural disasters, and more than 97% of all natural disaster-related deaths, were in developing countries. As Henry Miller of Stanford University stated, "Like the sinking of the Titanic, catastrophes are not democratic. A much higher fraction of passengers from the cheaper decks were lost. We'll see the same phenomenon with global warming." What will be the effects in our own regions in this country?

For a good overview of regional, Global Warming-related issues, changes, challenges, and solutions, the Union of Concerned Scientists (UCS) has made available invaluable information at its website (www.ucsusa.org/global_warming). It has downloadable documents that explore regional changes due to Global Warming in the U.S. including effects in agriculture, water, temperature, health, and forests. Also at the UCS's site is a "Migrating Climates" tool that shows graphically the potential shifting climate of each State over the next century (watch the State of Wisconsin "migrate" south to Arkansas by 2095 to highlight that the Badger State's climate in the summer will mirror the South). For California, UCS also operates a website with California-specific information on Global Warming (www.climatechoices.org).

"All across the world... increasingly dangerous weather patterns and devastating storms are abruptly putting an end to the long-running debate over whether or not climate change is real. Not only is it real, it's here, and its effects are giving rise to a frighteningly new global phenomenon: the man-made natural disaster."

- President Elect Barack Obama

Sea Levels

4-12

One of the most alarming effects of Global Warming is the rise in sea level. It is projected that the Arctic sea ice is melting so rapidly that it could disappear completely by 2040; other estimates show an ice-free Arctic Ocean much sooner. Simply put, melting ice leads to a rise in sea levels. For example, the melting of the ice caps during the last ice age resulted in a 120 meters rise in sea level. Why does this matter to us and our brothers and sisters around the world? In this country, a full 53% of all Americans live on or near the coast; almost 40% of the world's population lives near a coast. Rising sea levels, therefore, will directly affect billions of people.

For visual images of 32 coastal cities in the U.S. and what a 1-2 meter rise in sea level will look like, visit www.architecture2030.org/current_situation/cutting_edge.html. Using this site as a resource, try the following activity:

1. Pick a well known coastal city, like New York City, or Newport Beach, and print copies of the aerial-view of the city for each student from the www.architecture2030.org site.
2. Show the sea level rise view from the website for the city, and have the students shade in the flooded area on their aerial-view sheet.
3. Have students measure the percentage of surface area flooded.
4. Give the students a print-up of the aerial-view of your own city (a good resource is www.maps.google.com where you can get satellite views anywhere on earth), and have them shade in the same percentage of flooded area as the above city.
5. What would a flood of such magnitude mean for your city? Have the students write stories about the effects of this long-term flood (as a reporter, as an affected family, as a politician charged with leading the city's restructuring efforts, etc.).

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Agriculture

Changes in climate are and will continue to have a serious impact on agriculture across the globe. Certainly, the climate of each region (temperature and precipitation) has an enormous impact on the varieties of fruits, vegetables, and grains grown there: it is not a coincidence that apples are prevalent in cooler northern states like Michigan and Washington, while citrus fruits are found in warmer southern regions. But what happens as climates shift? In addition to the obvious effects of higher temperatures and altered precipitation on crops, consider what would happen, for example, if there are consistently mild winters in the mid-west: pests that are often killed by the frozen temperatures will survive in greater numbers causing serious damage to crops; similar examples abound.

What might the agricultural changes be in your area? Use the following activity:

1. Make a list of the key crops grown in your area (brainstorm, search online, call a farmer, etc.).
2. Using the "Migrating Climates" tool from the UCS website (see pg. 2), find out what state's current climate may be similar to your own within the next century. Make a list of the key crops currently grown in that state.
3. Analyze the differences between the crops of each state and what this may mean in your area.

Weather

4-12

Weather patterns are changing due to Global Warming, and the effects vary by region. In recent years in Greenland, milder temperatures have enabled greater fishing, the opening up of sea routes for trade, increased oil exploration, and an increase in tourism. Though these changes are helping the bottom line of that country's GDP, can Greenland be called a Global Warming "winner"? What are the long-term effects on Greenland's environment, and can any of us celebrate increased fortunes while others are adversely affected by the same events? Explore these issues locally by looking at the projected weather changes in your area. Start by brainstorming/researching your current weather patterns. Next, using the "Migrating Climates" tool (see pg. 2), list your area's potential weather patterns in the future. Are the changes "good" or "bad"? Why? Should we adapt to the changes, or work to circumvent them in the first place?

6-12

Health

What do mosquitoes mean to us here in the U.S.? At their worst, mosquitoes in this country have led to approximately 120 deaths/year since 1999 from the West Nile Virus (a very low number compared to most other causes of death in this country: consider that in 2005 heart disease led to 652,091 deaths and motor vehicle accidents led to 45,343 deaths). However, it is well known that mosquitoes are a serious cause of death in tropical regions due to the diseases they carry including Malaria, Dengue and Yellow Fever, and Encephalitis, affecting millions of people around the world every year. It is estimated that in Africa alone, a child dies every 30 seconds from Malaria.

To support our brothers and sisters in the tropical regions of the world, we should all support mosquito-control efforts in those areas. With rising global temperatures, however, the urgency to address the spread of illness-carrying mosquitoes right here in the U.S. will increase as their range moves north. A good activity to look at Global Warming and the health effects of mosquitoes is to learn more about this prolific insect. Small groups of students can be assigned different aspects of the mosquito including its life cycle and reproduction, the different varieties, the diseases they carry and how they carry them, the +/- of different eradication/control methods, and the changing ranges of mosquitoes in this country due to climate change.

"As long as it's ice nobody cares except us, because we hunt and fish and travel on that ice. However, the minute it starts to thaw and becomes water, then the whole world is interested."
-Sheila Watt-Cloutier, Chair of Inuit Circumpolar Council, commenting on commercial interest in an ice-free Arctic

RECOMMENDED

"The sad irony is that those of us who have little to contribute to the causes of climate change and sea level rise are the first in line to suffer the consequences."
-Redley Killion, Vice President, Federated States of Micronesia

RESOURCES

In addition to the websites listed under each activity on the previous pages, try the following:

- For a look at our global water crisis and possible solutions, check out French filmmaker Irena Salina's award-winning film "FLOW: For Love of Water." Her film includes interviews with some of the world's leading activists, scientists and policy makers, while looking at how everyday people are affected around the world. www.flowthefilm.com

- Another useful documentary is "Heat," an investigation of how governments and the world's largest corporations are responding to the Earth's looming environmental disaster. For more information visit: www.pbs.org/wgbh/pages/frontline/heat

- A good science-related resource for youth and adults is the book *How We Know What We Know About Our Changing Climate: Scientists and Kids Explore Global Warming* by Lynne Cherry and Gary Braasch. The book provides the "science behind the headlines...and what young people, and their families and teachers, can do to learn about climate change and take action." More information about the book is at www.dawnpub.com. Also at the site is a great list of more than 100 resources related to Global Warming and nature, science, and environmentalism.

- For younger children, a great book is *Flute's Journey: The Life of a Wood Thrush* by Lynne Cherry that shows the increasing perils that migrating birds face, many of which are being exacerbated by Global Warming.

- Many of the ideas for this edition of *With Eyes to See* come from the Eco-Justice Collaborative (www.ecojusticecollaborative.org).

CONCERN AMERICA

is an international development and refugee aid organization that sends doctors, nurses, engineers, educators, and nutritionists as volunteers to train and empower the materially poor in Mexico, El Salvador, Guatemala, Colombia, Ecuador, Mozambique, and West Africa.

In support of these projects, Concern America offers educational services in California which include:

- * Walk Out of Poverty
- * Infusion Methodology Workshops for teachers
- * "Training for Transformation" Workshops for adults
- * School and parish consulting for the implementation of the Bishops' Pastoral: "Sharing Catholic Social Teaching: Challenges and Directions" (June, 1998)
- * Lending library for resources of peace and social justice

Feel free to contact the Education Coordinator at Concern America for more information on any of these projects.

Mark Your Calendars: Concern America's 12th Annual Walk Out of Poverty and 2nd Annual Dance Out of Poverty: April 4, 2009

For more than a decade Concern America has held the increasingly successful Walk Out of Poverty in southern California, an event that provides education for the participants and a sense of solidarity with our brothers and sisters around the world,

while raising money for Concern America's development work in Latin America and Africa. In 2008, Concern America held its first annual Dance Out of Poverty with the same goals. If you live in the Orange County, California or Chicago, Illinois regions, join us!

Call Concern America to get information, walk packets, posters, flyers, and/or to schedule a presentation for your group. In the Chicago region, call 773-772-9523.

