



So you were hot in July? How about the future?

"Hot enough for you?" It's a common, sweltering, summertime query on the streets of Pittsburgh, but no matter what your response, you ain't seen nothing yet said Don Hoey in the Post Gazette October 6, 2006

According to a new two-year study of climate change projections in the northeastern United States, by the end of this century, summers in Pittsburgh could resemble those in Georgia or Alabama if we continue the unabated burning of fossil fuels -- coal, oil and natural gas,

The Northeast Climate Impacts Assessment report says Pittsburgh, which annually averages nine days above 90 degrees and one day above 100 degrees now, could, by 2100, see 66 days above 90 degrees and 24 days above 100 degrees.

What if we reduce emissions? Even if we begin to substantially reduce emissions of heat-trapping gases today, Pittsburgh's summer in 2100 will still warm up to resemble the temperatures now found in Kentucky and Virginia. That means the city will experience 30 days above 90 degrees and six days above 100 degrees.

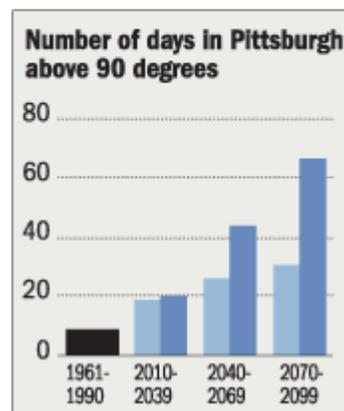
This extreme heat can be problematic in urban areas, where it is amplified by the heat island effect and can create dangerous, unhealthy conditions for the elderly, children and other vulnerable populations.

"The very notion of the Northeast as we know it is at stake," said Cameron Wake, co-lead author of

Hot future

Unless immediate steps are taken to reduce emissions of heat-trapping gasses, scientists predict that most northeastern cities will experience more than 60 days each year of temperatures exceeding 90 degrees. Even if steps are taken immediately to reduce emissions, temperatures would still increase, but not by as much, and eventually start to decline again.

KEY: ■ Emissions reduced
■ Emissions unchanged



Source: Northeast Climate Impacts Assessment
James Hilston, Post-Gazette
James Hilston, Post-Gazette

A new two-year study of climate change projections in the northeastern United States.

the report and research associate professor at the University of New Hampshire's Climate Change Research Center. "The near-term choices we make in the Northeast and around the world will help determine the climate and quality of life our children and grandchildren experience."

Taking the present, higher emissions path, winters here could warm by 8 to 12 degrees and summers by 6 to 14 degrees. Projections on the lower emissions path show increases of 5 to 7.5 degrees in winter and 3 to 7 degrees in summer.

Global Warming---Climate change!

Though climate change is a global issue, the Northeast, from Pennsylvania through Maine, plays a big role. According to the report, the nine-state region produces more carbon dioxide emissions than all but six nations. In the Northeast, transportation emissions account for the most emissions, one-third of the total, and electric power plant emissions total just under one-third.

M. Granger Morgan, head of the Department of Engineering and Public Policy at Carnegie Mellon University, said the conclusions of the new report are very similar to those of a U.S. Global Change Research Program study of climate change impacts on the United States done in 2000. The question is can we decarbonize the electric system of the U.S.; and the answer is yes for about 20 percent more than the current delivered price of electricity," said Mr. Morgan, who did not participate in the study but is an internationally recognized expert on climate change policy. "People who argue that a policy like that will wreck our economy are not paying attention to the current technology available."

Peter Frumhoff, Union of Concerned Scientists director of the Global Environment Program, said a simple "replacement strategy" -- using fuel-efficient, low-emission or no-emission technologies already available -- could allow the region, nation and world to reduce emissions by as much as 3 percent a year over the next 25 years.

"Right now we're adding fuel to a fire and it will burn more intensely if we don't make changes," said William Moomaw, professor and director of the Center for International Environment and Resource Policy at Tufts University. "Doing nothing is the worst action we can take."

The Northeast Climate Impacts Assessment is a collaboration of the Union of Concerned Scientists and a 14-member team of climate experts to assess climate change and its impacts on the northeastern United States.

The group already has begun a follow-up round of analyses to assess climate change impacts on forests, agriculture, coastal areas, urban centers and human health, as well as options for mitigation and adaptation. A report is expected early next year.

"Our forests will be affected by higher temperatures and lower water, as will our agriculture and public health, even under the aggressive lowering of emissions. We need to prepare and cope with the changes because the impacts are now unavoidable," Mr. Frumhoff said.

"And our potential to cope is a factor of the emissions choices we make today. The chance we have now is to minimize the stresses on the system by minimizing emissions of heat-trapping gases."

Climate is already changing in noticeable ways. Temperatures have been rising, particularly in winter, snow cover is decreasing and spring is arriving earlier. This means the smaller snow pack and higher summer temperatures will reduce the water supply, which will be further depleted by a longer growing season. Annual droughts are probable.

A panel of 12 climate experts, chaired by Gerald North, a geosciences professor at Texas A&M University, looked at "proxy" evidence for global warming such as tree rings, corals, marine and lake sediments, ice cores, boreholes, and glaciers. Combining the information gave the panel a "high level of confidence that the last few decades of the 20th century were warmer than any comparable period in the last 400 years".(National Research Council).

Climatologists predict effects including rising sea levels, fiercer storms, more wildfires, and warmer oceans. National Center for Atmospheric Research in Boulder, CO reports, "About half of last year's extra ocean warmth was due to global warming".

Pennsylvania outdoorsmen are worried about the changes seen in places that traditionally hunt and fish, as a consequence of global warming was the poll result released by the Pennsylvania Federation of Sportsmen's Clubs, a NWF affiliate.

On June 6, the National Academy of Sciences issued a report on climate change stating the global mean temperature is about 0.5 degrees C higher than it was a century ago; atmospheric levels of carbon dioxide have risen over the past two centuries; and carbon dioxide is a greenhouse gas whose increase is likely to warm the Earth.

So – it's real.....there is impact.....cause????no complete consensus...except that doing nothing is not the best answer!

300 MILLION NOW ON EARTH!

Think of the significance of this population increase. What is the area of greatest impact? How does this relate to today's education system? Standards? Curriculum?

MY VERY EDUCATED MOTHER JUST SERVED US NINE PIZZA PIES?????

**The New Solar System –
Mercury, Venus, Earth, Mars, Ceres (an asteroid), Jupiter, Saturn,
Uranus, Neptune, Pluto, Charon (Pluto's largest moon), Xena**

How about calling the smaller bodies “plutons”? dwarf planets? It's a very different solar system we now have with eight “classical” planets instead of nine!

You can send your name to the asteroid belt on the Dawn spacecraft. It will be recorded on a microchip and placed aboard the spacecraft accompanying it on its mission to the asteroid belt. After entering your name, you have the opportunity to print a document that verifies your journey aboard the spacecraft.

Ago to: <http://www.dawn-mission.org/DawnCommunity/Sendname2asteroid/nameEntry.asp> to find the name entry directions.

READY FOR HALLOWEEN?

Today Halloween is becoming an adult holiday...a masquerade like mardi Gras. And for children ---what a chance to get and eat all that candy! The caramel apples may be long gone. But the costumes and neighborhood safaris add to the decorations and fun of the night.

Actually, most of our traditions can be traced to the ancient Celtic day of the dead. And there stories and history for it all. You can find the complete story at <http://www.loc.gov/folklife/halloween.html>

EDUCATION NEWS

SAT SCORES FALL

College entrance exam scores showed he largest decline in three decades! However, College Board officials believe this is largely the result of fewer students deciding to retake the expanded exam.

This was the first time the test included a third section with an essay hand-written in 25 minutes. It also included harder math problems, and it cost more too. In Pennsylvania 74% of the class took the test vs 48% tested nationally.

	<u>1996</u>	<u>2005</u>	<u>2006</u>
Math	492	503	500
Critical Reading	498	501	493
Writing	N/A	N/A	483

Some colleges are making the tests optional. Some are moving to using the ACT college entrance exam, an achievement test with an optional essay. ACT has recently reported that its scores are up.

DATA DATA DATA

Performance data is driving education now – education based on academic standards. This has increased since the enactment of No Child Left Behind that mandates that all students in public schools should be proficient in math and reading. The problem is how to use in a meaningful way the mass of data being collected.

In 2002 the state Board of Education called for a value-added approach. This looks at how much of a student's progress can be attributed to the school. Now each district will get a new tool called Pennsylvania's Value-Added Assessment System or PVAAS. The state will pay for the analysis for more than 900,000 students.

PVAAS uses statewide achievement data in math and reading from the Pennsylvania System of School Assessment (PSSA).

SCIENCE SNIPPETS

What's Your BMI?

What is obesity anyway? The government equates obesity with a body mass index or BMI of at least 30. You can calculate your own BMI by dividing your weight in pounds by height in inches, squared and multiplying that total by 703.

Pennsylvania ranks 15th in the rate of adult obesity at 24% and 20th in the rate of obesity and overweight adults combined at 60%. Thirty one states have registered an increase in obesity among adults. Will finding ways to improve fitness and changing our food intake be the answer and improve our health? How about the rise in obesity in children?

The new initiative "Environment and Health: A Systems Approach" being conducted by PRCST is addressing the Obesity Crisis along with Air Pollution – Mercury Levels. These are very complex issues and challenge us to make meaningful connections over the several disciplines of health, physical education, environment and science.

FOOD AND TOXINS

E.coli pollution has been a major problem recently. The spinach contamination seems to have been linked to runoff from a dairy farm that contaminated the irrigation water used on the growing spinach. This is just one of a series of problems with this ever-present bacterium that has hundreds of strains – most of which are beneficial or harmless. But the presence in water at an elevated level indicates the presence of animal or human waste that could contain other pathogens, viruses, or diseases.

E. coli pollution closed the beaches of Lake Erie Presque Isle for the past two summers. And experts cannot determine the source of the pollution.

E. coli is in the domain Eubacteria (prokaryotic cells)– and can cause food poisoning (like Salmonella) and found in uncooked meat and eggs and other foods (like the spinach).

In the domain Eubacteria are also good bacteria – those in yogurt, to make grape wine, and cheese from milk.

Other domains are: Archaea – the microbes; most living in extreme environments, but some in our guts. Different from bacteria, Archaea is a different simpler form of life and may be the oldest. They require neither sunlight or oxygen and may have survived on other planets.

The domain Eukaryota all have eukaryotic cells...with a nucleus that contains genetic material within chromosomes. Plants, animals, protists, and fungi –
-and you – are all members of this domain.

DROWNING IN PLASTIC and OTHER WASTES

Are we over-packaging? Why does everything have to come wrapped in plastic – or in plastic containers. ...even beer now. Given – there are plastics that are recyclable and can offer many usable products. But many are essentially not biodegradable. And the strength seems to be increasing---try to open the bubble-wrapped items with ease. There must be better ways to take advantage of the uses plastics provide without the excess we now have.

Some plastics end as components of toxic wastes ---dumped wherever possible. Hundreds of tons of toxic waste was jettisoned around the Ivory Coast's main city Abidjan...after dark one night.

Some contamination can be cleaned up by plants ...phytoremediation! This is a real improvement over other environmental remediation techniques such as digging out the contaminated soil and relocating it – or leaching out the contamination by applying chemicals to the soil.

One type of plant is not sufficient for every remediation project. Polluted soils are globally distributed, so a whole battery of crops must be developed...different plants for different soils. Companies are beginning to use research and put it in action. Ecolotree in No. Liberty, Iowa, has developed engineered tree systems to remove and contain pollutants. Its engineered forests have been installed over the past 15 years at landfills, industrial facilities, gas stations, and fertilizer storage areas.
