Slow-motion catastrophe

Scientists view climate change as all-too-real global threat

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Published on: 01/06/05

With hurricane season now officially over, those of us in the southeastern United States can breathe a little more easily. But allow me to walk you through the following scenario.

Imagine that a major hurricane has been reported off the coast, and the National Hurricane Center has calculated that there is a 90 percent probability that it will strike somewhere near Savannah. There is an 85 percent chance that the storm will be at least category 3 (winds of 111 mph), and a 65 percent risk that the storm will strike as a catastrophic category 5. The amount of damage and loss of life depend strongly on how decisively we act. What should our response be?

Should we:

• Recognize that a major storm is almost certain to make landfall, and figure out how best to minimize the ensuing damage?

• Criticize the science of hurricane prediction because there is "only" a 90 percent chance that the storm will make landfall, and if it does, the scientists apparently can’t make up their minds just how strong it will be.

• Accuse the National Hurricane Center of "fear mongering" as a method of garnering funding, or wait and see what happens when the storm strikes before responding because evacuation would reduce tourism dollars?

Most of us, I’d venture, would view the first option as the only sensible course of action. Even if a response comes at some expense, we should do everything in our power to avoid the damage that such a monster can cause, because in the long run ignoring the storm would be far more costly.

I pose this seemingly farfetched question because the latter three options have all been proposed as appropriate responses to global climate change, even though ignoring global warming is certainly no less catastrophic than ignoring a major hurricane.

Among the scientific community, there is broad consensus that climate change is already occurring, and (with a confidence level of about 90 percent) that humans are contributing to this process through the production of greenhouse gases, primarily carbon dioxide, largely by burning fossil fuels such as oil and coal. Every major relevant scientific society has acknowledged the validity of these theories.

Climate change scientists predict that average global air temperature will increase anywhere from 2.5 to 10 degrees F within 100 years. To place this into context, the average air temperature during the last ice age was about 9 degrees F colder than today. Importantly, the temperature increase will depend largely on carbon dioxide emission levels.

Thus, while the precise magnitude of global warming still remains to be seen, the fact that our climate is already showing signs of change, and will continue to do so, is not in doubt. Nor is the fact that these changes will have major consequences: a warmer world will affect crop yields, increase the prevalence of many diseases such as malaria and dengue fever, and increase the frequency and severity of hurricanes.

In the last decade alone, more than 25 percent of coral reefs have sustained significant damage
from elevated water temperatures and disease, and entire island nations are poised to be swallowed by rising sea levels. The Arctic Climate Impact Assessment recently released by scientists from eight nations noted that winter temperatures in parts of the Arctic have risen by up to 7 degrees F, melting large sections of ice. This is not a storm to be ignored.

Scientists do not make predictions of the impacts of climate change to garner funding, or to create support for environmental causes, as posited by Michael Crichton in his new novel, "State of Fear." We make them because the data all point to major changes on the horizon, and because we would be remiss not to tell the public about the coming crisis.

The only way to address this problem is to significantly reduce greenhouse gas emissions, immediately and permanently. We need to support bipartisan legislation (the Climate Stewardship Act) that calls for reductions in greenhouse gases by large companies. An analysis by the Massachusetts Institute of Technology estimates that the annual cost of this legislation would be approximately $20 per household, not exactly the end of the American economy.

Will climate change occur as rapidly as in the movie "The Day After Tomorrow?" Of course not. Our planet's climate is like an enormous ship, and it has taken many years for us to turn its course through the burning of fossil fuels.

But solutions to climate change take time as well, and the longer we wait to reduce greenhouse gas emissions, the more difficult the problem becomes to correct. This is not a crisis we can afford to ignore.