

Mauna Loa scientist looks on bright side

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KAILUA-KONA, Hawaii – Dozens of experts gathered this week on the Big Island to recognize 50 years of continuous carbon dioxide measurements and research into human-caused climate change.

The three-day symposium, sponsored by the National Oceanic and Atmospheric Administration, addresses the impacts of increased greenhouse gases on land and oceanic ecosystems, and how those impacts might be mitigated.

Among the guests was Steve Ryan, a scientist at Mauna Loa Observatory on the Big Island, the site of the first carbon dioxide measuring experiment in 1958.

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For 18 years, Ryan has continued the work of the late Charles David Keeling, a Scripps Institution of Oceanography professor who was the first to report that global atmospheric concentrations of carbon dioxide were rising.

His life's work produced the "Keeling Curve," which has become the symbol of the changing chemistry of the atmosphere and climate warming.

Air samples now are taken weekly at 60 sites around the world, including atop Mauna Loa and at sea level in Hilo on the Big Island, and forwarded to research labs for analysis.

The results help spotlight a growing concern for the future of the planet, which led to the formation of the U.N. Intergovernmental Panel on Climate Change

The panel shared the Nobel Prize with Al Gore this year for "their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change."

Ryan said Wednesday that although the research results are cause for concern, they aren't necessarily harbingers of total doom.

"Our 50-year crystal ball is so cloudy, it's almost useless," he said. "Bad

trends can reverse. The science is already there. People just have to realize it's cool and want to look for it."

The most damaging greenhouse gas – carbon dioxide, a side product of burning fossil fuels – has increased by more than one-third since the 1700s, after a nearly constant rate for the previous 10,000 years. The present concentration is higher than at any time in at least the past 420,000 years.

Scientists have recorded the largest carbon dioxide growth rate in the last decade, and the most dire of predictions point to potentially devastating rising sea levels, melting ice and snow caps, and rising air temperatures that could threaten entire land and ocean ecosystems.

Some scientists, however, are optimistic the scientific data doesn't spell the end of life.

Ralph Cicerone, National Academy of Sciences president, said worst case scenarios are not forgone conclusions, and policymakers on local, federal and international levels are beginning to take positive steps.

Scientists and elected officials are only two factors in combatting climate change, he said. The entire consumer population is the greatest factor.

"Science won't do it alone," Cicerone said. "The toughest issue of all is turning out to be communication. We've lost the ability to communicate with each other, as well as society at large. We need to help people sort through the options."

The options will just keep on coming, Ryan said, as technology drives toward solutions.

For example, Ryan said, just 100 years ago automobile and air transportation were in their infancy. Today, they are a way of life.

"Look forward in 100 years and it would be foolish to think those kinds of advances won't happen again," he said. "This is a whole new game. Whatever happens in the future depends on the technologies of the future."

Ryan said he powers his own home with a small hydroelectric generator and uses about one-seventh of the power of the average American while enjoying his big TV, fridge and Internet connections.

"Whenever you start something new, you take faltering steps," he said. "But it's all the little efforts that will guide the big picture."

The conference continues Thursday and Friday, with sessions on ocean impacts, human adaptation and mitigation options.

■ On the Net:

Carbon Dioxide Symposium: www.co2conference.org

NOAA Mauna Loa Observatory: www.esrl.noaa.gov/gmd/obop/mlo/

Intergovernmental Panel on Climate Change: www.ipcc.ch