Climate Change is going to affect the Hudson Valley

By Antonia Shoumatoff

With the conviction of crusaders, a panel of scientists and experts presented the trickle down effect that climate change is expected to have on the Hudson Valley region at a Cary Institute forum on Saturday, October 22.

Attended by 130 local officials, CAC members, non-profits and local citizens, the information presented put an emphasis on how to manage risk or plan for unknowns. According to agricultural expert David Wolfe of Cornell, climate change may allow for experimentation with new crops. "The European wine business is already benefitting from the changing climate. Inspite of millions of dollars of freeze and flood damage, the growing conditions are good for cabernets."

Longer growing seasons, wetter weather, heat stress on livestock will put stress on growers. "The questions is whether small family farms will have the funds to adapt," continued Wolfe, while describing plant-appropriate perennial fruit crops that could survive the new required hardiness and how to anticipate new weeds, plant diseases and insect pests, including the flea beetle and the corn earworm.

Forest eco-system scientist Gary Lovett described the effects of anticipated reduced snow cover on trees, animals and birds. Certain tree species will shift northward. We will have fewer maples, fewer chickadees, grosbeaks and thrushes. There will be more hardwood and less mountain spruce forest. The hemlocks are already being decimated by the Hemlock Wooly Adelgid and hopefully a predator will emerge to stop them. The Mountain Pine beetle is killing millions of trees in the Rockies and the anticipated desertification of parts of the West may create a migration toward the northeast.

The Hudson Valley weather will continue to get wetter and more humid with intense storm events and dire droughts which will cause heat stress on livestock and require dairy barns to put in cooling systems. The high CO2 levels will reduce herbicide efficacy. Health effects could include more asthma and increased West Nile Virus.

Dr. William Schlesinger, Cary's president and a Congressional advisor on climate change, gave a helpful overview of global warming and expected local climate change. He referred to a study in the *Journal of Hydrology* that demonstrated a steady rise in temperature in the Hudson River new Poughkeepsie since 1975.

Other barometers are the 44 bird species that are arriving earlier in the Spring to the region. "The last 150 years have put a lot of Co2 into the atmosphere in relation to the entire human past. The climate here will resemble Richmond, VA and Raleigh, NC and we will probably have some Spanish moss. Our area will get wetter and Texas will continue to get drier."

Flooding, the ongoing issue for this region, was spoken of by the Director of the NYS Water Resources Institute at Cornell, Dr. Susan Riha who is also a professor of Earth and Atmospheric Science.

"USGS data showed flood tides on the Hudson River rising 8 feet from Spetember 10-24th, a very unusual event....a study from Princeton deconstructed why and where on the East Coast peak flows are occurring in March and April which can give us a better sense of probability of where to put in water structures."

Dr. Riha also supported the development of decentralized waste water systems.

Eban Goodstein, the Director of Bard College's Center for Environmental Policy spoke of the importance of enacting policy that makes dirty energy more expensive to use through cap and trade for northeastern electrical utilities. He described natural gas as the bridge fuel and said that people need a compelling reason to change their way of life. He predicted that extreme events will continue to cost tens of billions of dollars but that energy independence and retrofits will provide more jobs locally. He desccribed how Australia passed a carbon use tax after their recent major climate disasters.

Alison Chatrychan of Cornell's Dutchess County environment program facilitated a panel discussion about how to respond to climate change on the local level. She spoke of the NYSERDA Climate Change Community Pledge that helps towns to set goals for reducing greenhouse gases as well as electricity use. Towns are urged to create a task force to encourage green infrastructure and maximize usage of power from renewable sources. Dr. Schlesinger said that each electricity provider should be required to produce a certain amount of electricity from solar power.

Manna Jo Greene of Clearwater mentioned a $1 million grant per region that is available through NYSERDA to develop a regional economic sustainability plan for towns to transition into a green economy. Sandra Meier Ph.D., senior project manager from NYSERDA said that they have only received 800 comments on the official New York Climate Change proposal which can be seen at www.nyclimatechange.us, yet the DEC has received over 15,000 comments on hydrofracking.

The state now has a Climate Action Council, a plan to reduce greenhouse gases by 80 percent of the 1990 emission levels. Complex actions by state and municipal authorities will be necessary to meet that goal.

The forum provided resources for towns to study and actions to apply but, as Eban Goodstein remarked, "We do not yet have a political movement to mobilize the science. Our system has been set up so that an organized minority with money can block change. The scale of what we are trying to accomplish is huge, we have to transform a positive vision of the future into political power."

After the session, Dr. Schlesinger said "It would not surprise me to see maples disappearing from the forests of Dutchess County before mid-century. They will not disappear overnight, but young trees will not be available to replace canopy trees as they die."

He added: "CO2 will keep rising in the atmosphere as long as we are emitting any amount, but the rate of rise will slow if we cut back. It has been estimated that we have a 53 to 87 percent probability of exceeding a climate change of more than two degrees Celsius unless we cut emissions more than 25 percent from the level of 2000 by the year 2020. Emissions were about eight billion metric tons per year in 2000, so we'd need to cut back by 2 billion tons per year by 2020. Unfortunately, emissions had grown to nearly 10 billion metric tons per year by 2008."

He suggested taking people out to lunch to spread the message. He ended the forum saying: "Onward, into battle!"