GC3 Natural and Working Lands Forest Sub-Group – April 21, 2020

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Climate Change and Vulnerable Communities

It is disarming to write about vulnerable communities affected by climate change, given the current pandemic, which makes us all vulnerable. Like most disasters, however, the pandemic does not have an even impact even as it is global. Data indicates that in the United States, poor and especially poor communities of color are at additional risk and have the worst outcomes when infected with COVID-19. Although the statistics are incomplete, the CDC has already noted and remarked on the disparities. The vulnerabilities that are exposed by the pandemic reveals the health liabilities associated with poverty and marginal social status. Similarly, the communities that are currently suffering disproportionately in the COVID-19 crisis are at a higher risk of suffering the harmful effects of climate change.

For today, I want to cast my net a little more broadly. I will define communities to include occupation groups, ecosystems, as well as demographically distinct groups. The granular data for areas and populations in Connecticut is hard to come by, so I base many of my points on extrapolation or inference from the more broadly available evidence.

Agriculture

The farming community, as presently constituted, will suffer from changing climatic conditions. The two local groups that are likely to suffer most are the dairy and maple sugaring industries. They will both suffer for the same reason. If the predicted temperature increases arrive, it will result in lowered milk production and higher milk production costs. The reduced output will result from heat stress afflicting the cows and lower calving rates. The current value of the dairy industry is over $70 million, and it represents 13% of state farm revenue. Producers are likely to face increased production costs, and the relative elasticity of demand will determine how much of this increased cost can be passed on to consumers. The price/demand function is something that the current crisis might also help us understand. However, the pervasive economic dislocations make this a difficult time to use as a basis for prediction.

Maple production (as of 2018) brought in over $1.3 million, and while the number of taps went up, the average yield per tap was down almost 5%. This trend is likely to continue as the number of days that sap flows and nights below freezing fall. Tied to this decrease is reduced tourist traffic. Fall foliage viewing, which is a significant source of seasonal tourist income is also likely to be reduced.

In addition to these two industries, climate change (measured as warmer temperatures) will result in an increased deer population and insect predation. Poison ivy will not only grow more quickly, but its toxicity will increase. The warmer temperatures will create conditions for tiger mosquitos to take root and for southern ticks to continue their northward advance. Tiger mosquitos are responsible for the spread of West Nile virus, and Lone Star ticks spread Ehrlichiosis, anaplasmosis, heartland virus, and Alpha-gal syndrome, which is a type of food allergy to red meat. The last is perhaps the most serious because it can result in anaphylactic reactions.

Coastal communities

Coastal communities are likely to suffer an increase in flooding. Perhaps symptomatic is the increasing loss of salt marshes. The impact of sea-level rise on estuaries will result in the loss of intertidal wetlands and the wildlife they support. One report suggests that the effects on salt marshes and their wildlife will likely be both irreversible and severe. While we do not commonly think of marshlands as communities, they do represent complex biotic zones that support varieties of wildlife and provide ecosystem services to the human population.

Low-Income communities

The impact on low-income communities and communities of color will be dramatic. (I am using the definition of environmental justice communities found in Executive Order 12898.) These communities already suffer a higher incidence of asthma and other respiratory ailments, and those conditions are likely to be made worse by climate change.

The increases in temperature and precipitation produce at least two situations that will contribute to respiratory distress. First, air quality will be made worse at the ground level, and poor air quality, especially higher ozone levels, are shown to exacerbate asthma. Second, the increase in precipitation, as well as longer periods of warm weather, will produce extended pollen seasons and their attendant hazards. The higher humidity increases the harmful impact of particulate matter on respiratory function.

As the current pandemic makes plain, the lack of access to health care only magnifies the health disparities. Low income and other environmental justice communities have inferior housing and social infrastructure that makes them less resilient to climate change. One needs only to note the increased deaths associated with hotter weather to see that continuous higher temperatures will increase the mortality rate for those communities that lack the infrastructure to adjust. Cardiovascular deaths increase in poor and elderly communities when there are extended hot periods.

In addition to the direct effects of climate change, the impacts on food costs and availability will fall more heavily on poor and marginalized communities. Higher prices and lower availability demonstrate the connection between those sectors of our economy likely to suffer in the face of climate disruption. Some cities and towns in Connecticut are already food deserts. New Haven, for example, has been classified as a food desert. Climate change will only exacerbate the harm of food scarcity. (As a side note, The World Food Program has noted how the coronavirus pandemic is crippling food systems. While it is probably wrong to draw direct parallels, the consequences to distressed communities should lead us to think about how to address food system disruptions caused by climate change.)

Of particular note, the availability of forest spaces, whether in the form of urban parkland or more rural conservation areas, should be considered a key component of public health. The recent psychological data shows something I suspect we all know intuitively, that access to natural spaces is good for our health. Being able to use forested places improves mental health and physical well-being. The consequences to forest cover of climate change, particularly when understood as a critical component of the ecosystem services nature provides, is an environmental justice and public health issue.

Indigenous communities

There are two federally recognized tribes in Connecticut, the Mashantucket Pequot Tribe and the Mohegan Tribe of Indians of Connecticut. There are three state-recognized tribes, Eastern Pequot Tribal Nation, The Golden Hill Paugussett, and the Schaghticoke Tribal Nation. I could not find data that specifically addressed the climate change impacts on tribes. Still, to the extent that tribal people are part of the environmental justice communities described above, they are likely to suffer the same burdens. The legal relationship between the tribes, the federal government, and the state is one area that requires additional study. Because the two federally recognized tribes were only recently re-recognized the obligations of the federal government to manage or assist in the management of natural resources controlled by the tribes is likely to differ in important ways from the conventional management obligations. The state may not have a separate trust obligation to state-recognized tribes. Still, if the lesson from western tribes sheds any light, there may be a yet unrealized environmental management obligation on the state.