

Climate Change in Connecticut Through an Observational Survey.

Climate change is a scary and daunting problem. The whole world is experiencing consequences, some more than others. From wildfires, flooding, drought, heatwaves, intense storms, and much more, it is changing everyday lives. It causes damages to homes, businesses, parks, food production, mental health, and so much more. There are general conclusions that have been made about the world as a whole, but each part of the world experiences extremely different problems. This paper will focus on climate change in Connecticut.

NOAA National Centers for Environmental Information highlights 3 key problems that affect Connecticut the most. The first being a rise in temperatures. Temperatures have risen almost 3.5 F since the beginning of the 20th century. Not only is there a rise in temperatures, but an increase in heat wave intensity. Heat is a significant problem for lots of people in Connecticut. For some, there is a lack of air conditioning in their homes, and for others there is no escape from the heat if they do not have a stable living situation. The heat affects older citizens, "People aged 65 years or older are more prone to heat-related health problems." (CDC)

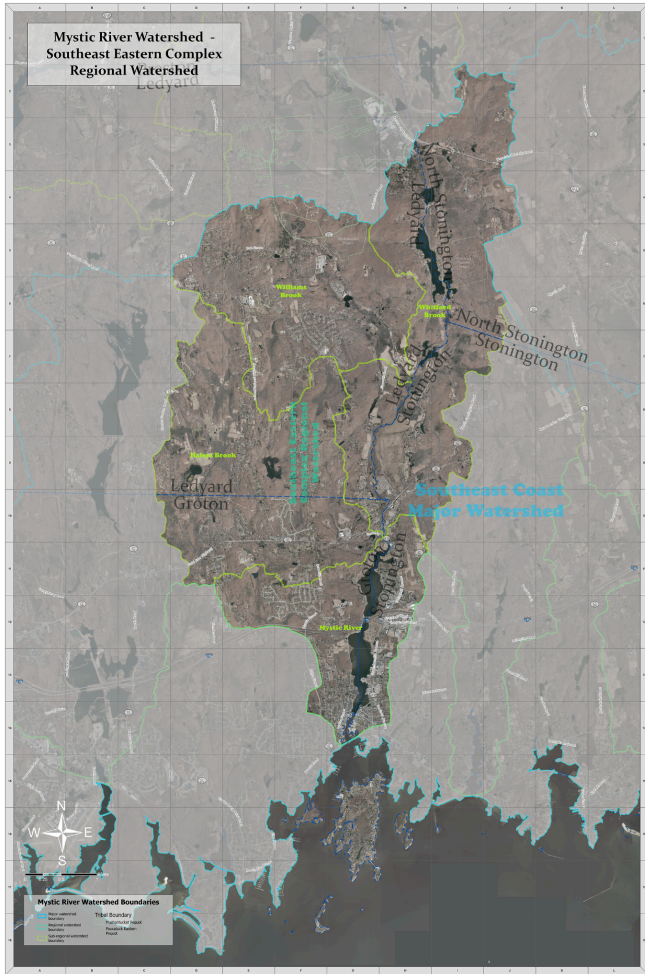
The second key message is that annual precipitation has been highly variable. While there has only been a slight increase since 1895, that doesn't mean precipitation isn't a problem. When initially looking at the amount of precipitation received each year, you might not see a difference. The problem is that it is all coming down during extreme weather events, cities are receiving weeks worth of rain in a couple days. The frequency and intensity of precipitation events in Connecticut are projected to increase. Precipitation causes a lot of problems for

people and the environment, the main problem being flooding. When loads of water comes down at the same time, there is not enough room for it to drain, especially in more urbanized areas.

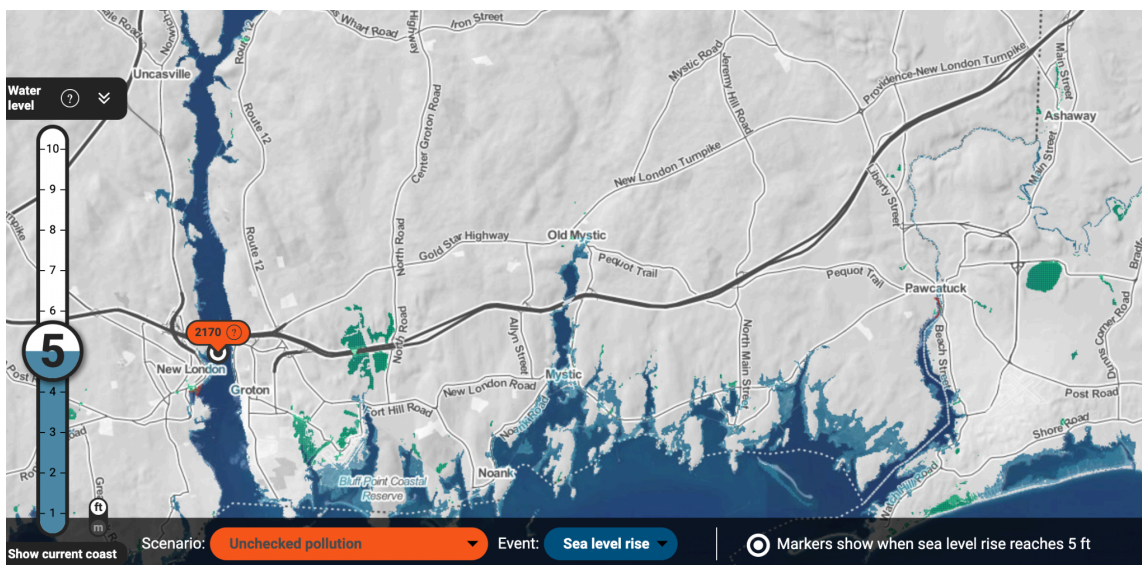
The third key message is a rise in sea level rise. "Sea level has risen at a rate of 10-12 inches per century along the Connecticut coast, faster than the global rate." (NOAA) The global sea level is projected to rise between a range of 1-4 feet by 2100, Connecticut possibly seeing bigger numbers. Sea level rise is an intimidating problem with more than 61% of Connecticut's population living in coastal areas. Similar to precipitation, sea level rise causes flooding, as well as erosion and loss of beaches/land. These issues can lead to property damage, closing of businesses, loss of income and so much more.

All of these impacts cause lots of physical problems, but it is important to note the mental health impacts climate change has. Heat waves can cause stress, fear, health problems, sometimes heat waves increase abuse and domestic violence. Precipitation and sea level rise can make it impossible for people to commute to their jobs. It can cause businesses and homes to flood, resulting in unfathomable costs that most people don't have the money for. This can lead to mold in houses, which leads to more health problems. Not being able to leave your home, or walk on the beach can have major mental health impacts. These problems are just scratching the surface of what climate change does to a town and people.

The Mystic River Watershed includes Stonington, Groton, Ledyard, North Stonington and Eastern and Mashantucket Pequot Nations. The Map shows the outline of the watershed as well as specific Brooks and Rivers that run through it.

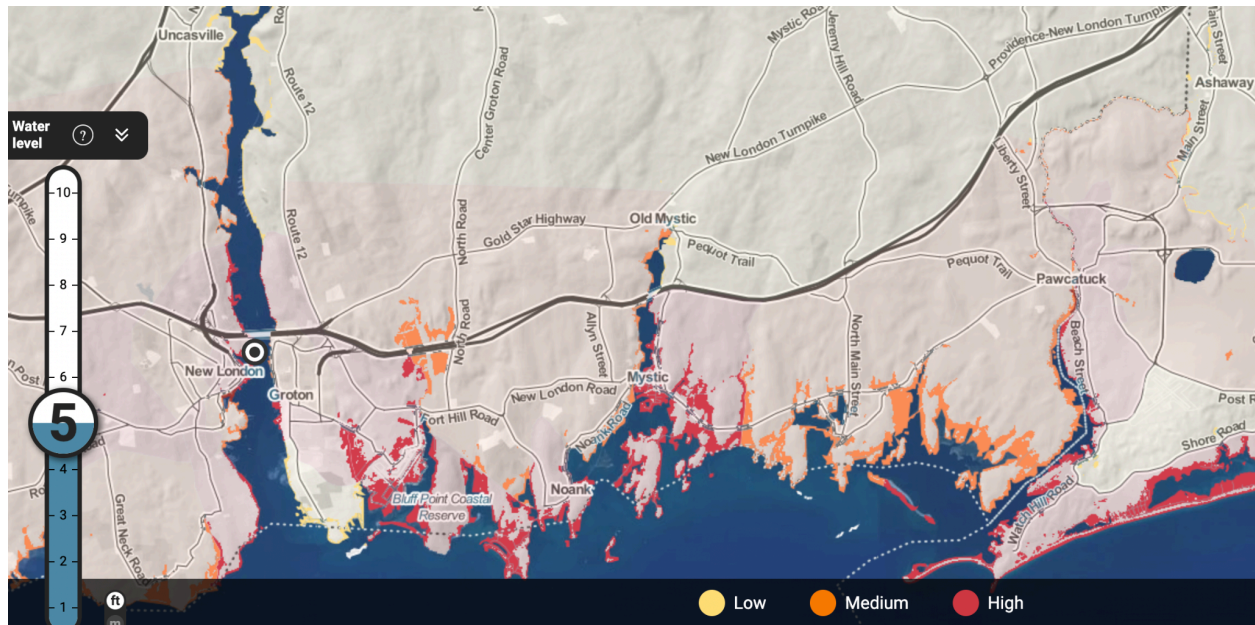


(Alliance for the Mystic River Watershed)



(Surging Seas)

This map shows the water levels if there is unchecked pollution in 2170. I think this is important to show so you can see how much land is going to be affected by sea level rise. The unchecked pollution means that there has been nothing done to mitigate climate change, so this is the worst case scenario.



(Surging Seas)

This image shows the social vulnerability to sea level rise, and in Mystic the vulnerability is high. This means that these areas are already vulnerable to other issues, and are more at risk for damages.

From researching this area I was able to determine what climate change impacts would make sense in a survey or an app to collect climate change data. There were 3 obvious choices, temperature, precipitation, and sea level rise. These are possibly the 3 biggest problems that towns in Connecticut face. While these problems are extremely important, the point of this app was not to only collect data about catastrophic events. The main goal of this app is to derive data on everyday observations. This is why the survey has categories like growing seasons and plant and animal sightings.

The most important part of this survey was to capture how people are feeling. Climate data lacks the qualitative aspect. We want people to be able to contribute to what they are noticing because they understand the differences the best.

The first 3 categories on the survey are Sea Level rise, Precipitation, and Temperature. As said above, these were obvious choices. They can be used to collect data on extreme events, or just everyday experiences. For example someone might notice a particularly warm day during a certain month. They can record how it affected their life, mood, schedule, anything like that. The next category was snowfall, similar to precipitation, it is a very important category in New England.

Above are the main weather categories, but we wanted to go a step further. Next in the list are growing patterns, animal sightings, plant sightings, and pests. While these might not seem as obvious, these are the things that people notice in their everyday lives. They might not affect people's lives as much as extreme weather events, but they are perfect examples of climate change. Citizens can observe when their flowers bloomed, or if there was a late frost that ruined their plants. Animal and plant sightings are important because you might see an animal or plant earlier in the season than you are used to, meaning it's either warmer or colder than usual. Lastly, pests were very important for us to have as an option. Things like ticks are so dangerous, and can harm a lot of people. This way people can help spread awareness about dangerous things they are noticing.

The next question asks the participant to describe their observation. This gives every user the opportunity to go into as much detail as they want, and make clear what they are trying to point out. The next couple questions are all questions asking the participant to rank their feelings out of 10. The first asks on a scale of one to ten, "how much physical damage did this event create?" The survey is made so that not every question is required. If the participant doesn't feel like this relates to their observation, they don't need to fill it out. Someone would answer this question if their basement was flooded, or a storm damaged their house.

The next question is “how much did this event affect your daily life?” This question is important because it collects data on people's feelings and experiences. We are able to capture how much climate change is affecting daily schedules and choices. For example, if a flood blocked off a road and stopped someone from getting to their job or school, they can express that here, it also gives them the option to explain how it affected their life.

The next question asks the participant to rank how the event affected their mental health. This is a critical piece of information that doesn't get collected enough. Climate change affects mental health in such a huge way. The impact on mental health is usually a secondary impact, meaning it is a result of something else. Physical changes to the environment and land are primary impacts, and those impacts can affect how we feel. If someone's house is flooded and they can't afford to fix it, it can negatively affect their mental health. The next question asks if the participant had to pay to fix any damages, and to leave the amount they paid if they feel comfortable. The point of this question is to have some numerical data to grasp how much of a toll the event took on the participant.

The last question just simply asks how the event overall made the participant feel. This is a final place for them to get their thoughts down and anything we weren't able to capture through the questions that they thought was necessary to share. This survey is great because it can be easily changed based on how the climate changes. Based on responses we will be able to tell which questions gave us lots of information, and which don't really give us anything important.

In conclusion, Connecticut is experiencing so many changes, and is only going to continue to experience them. This survey is a way for people who are experiencing the changes to share their experiences on climate change.

Citations

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