Hot Topic:

A Climate and Health Adaptation Plan for the Greater Nashua Region

Executive Summary

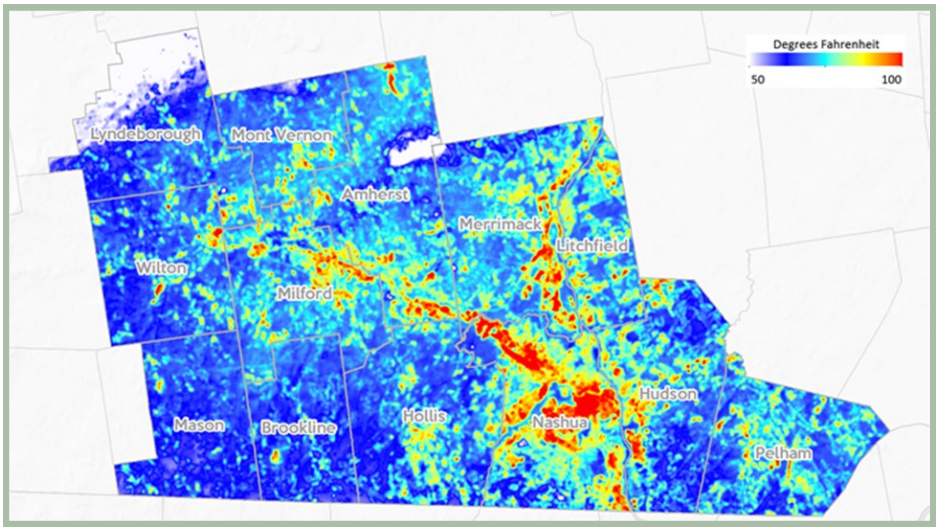
This project was initiated by the Greater Nashua Regional Public Health Network and the Nashua Regional Planning Commission to address the health impacts of climate change in the region.

This plan includes an assessment of the region's geography and demographics, weather hazards and climate risks, and populations vulnerable to those risks. Through an analysis of various local, regional, and state data sources, the four main areas of the plan are extreme heat, air quality, extreme precipitation events, and vector habitat. Mapping aided the identification of vulnerable populations. Once the weather hazards and their associated health impacts were thoroughly studied, they were ranked through a prioritization process that included the input of partner organizations.

Heat-related illness was identified as the primary health impact affecting the region, because of the anticipated increase of number of days with a heat index above 90˚F, particularly in the more urban areas of the region. NRPC is currently working with partner organizations to formulate the most effective interventions to mitigate the effects of extreme heat.

Assessment of Climate and Weather Hazards

Extreme Heat



Risks:

- There is a projected increase in the number of days that are above 90˚F
- Minimum temperatures are also expected to increase, which doesn't allow people to cool down at night
- Nashua has many urban heat islands (pictured in red above), which exacerbate the effects of heat on health

Associated Health Impacts:

- Can result in heat rash, cramps, fatigue, heat exhaustion, and heat stroke
- Exacerbates pre-existing medical conditions and increases ED visits
- Elderly and very young are usually considered the most at risk

Air Quality

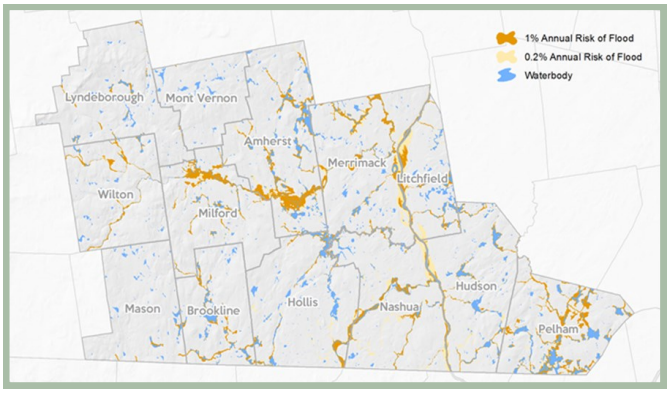
Risks:

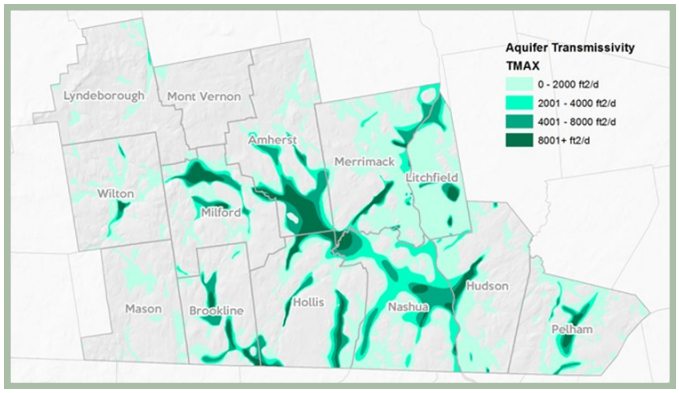
- Reduced air quality due to ground level ozone
- Growing seasons are expected to be extended

Associated Health Impacts:

- May exacerbate the risk of respiratory, cardiovascular, and other ailments
- Populations with asthma and other respiratory illnesses are most at risk from poor air quality.
- Asthma hospitalizations primarily are the elderly and children under four

Extreme Precipitation - Flooding and Drought Events





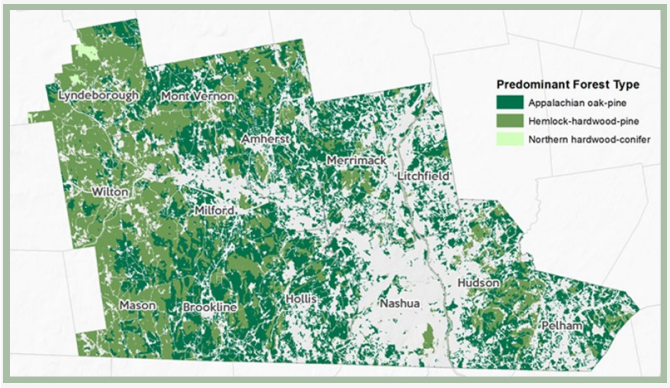
Risks:

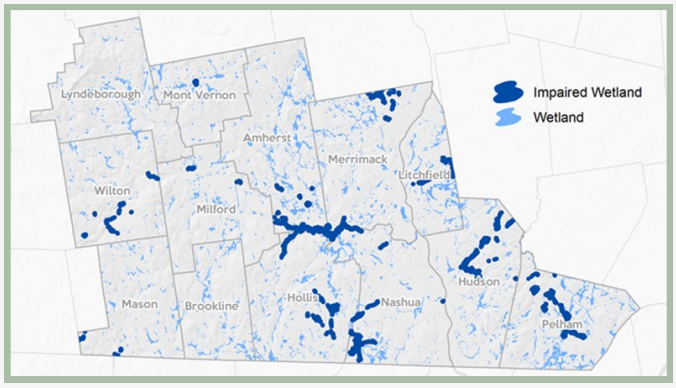
- Extreme precipitation events are expected to increase in frequency and intensity, summertime moderate rainfall events are projected to drastically decrease

Associated Health Impacts:

- Mental stress, contamination of groundwater
- People living in floodplains (upper left), People who rely on aquifers for private drinking water (upper right)

Habitat Vector





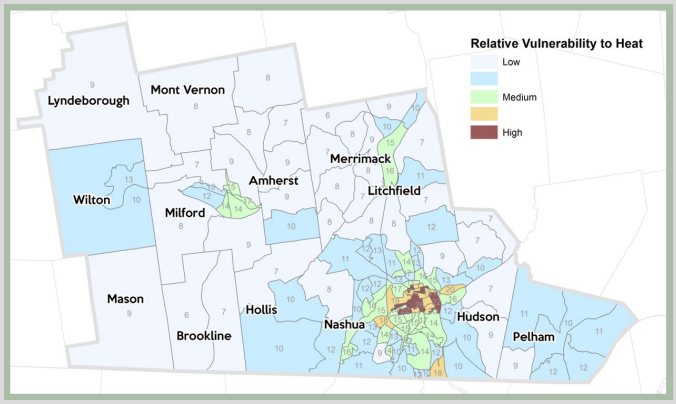
Risks:

- Longer growing season and less snow cover means extended life for vectors (tick habitats on the left; mosquito habitats on the right)

Associated Health Impacts:

- Lyme Disease, West Nile Virus, EEE
- Affects people who live and work in more rural areas
- Children in summertime have greater risk of exposure

Prioritization Process



The assessment process identified a number of intersecting hazards that prioritized rising temperatures, heat stress, and vulnerable people in the Nashua area. Since extreme heat events are related to air quality, habitat change, and certain extreme precipitation events (i.e., drought), the partners of this plan directed the focus of this plan toward **heat stress.** NRPC created a simplified heat-specific vulnerability index (right) to describe areas in the region that maybe contain populations susceptible to the effects of heat stress. The approach is based a modification of a publicized study that concluded on the national level, heat vulnerability is most strongly influenced by educational attainment, poverty, race, proximity to green space, social isolation, availability of air conditioning, and elderly/diabetes status.