Carbon CO2alition

New Hampshire Citizens for a Responsible Energy Policy

This fact sheet lists some of the major ways in which climate change could have an impact on the environment and economy of New Hampshire.

The Changing Climate of New Hampshire

- Analysis of records from the National Climate Data Center shows that New Hampshire's annual climate has warmed by an average of 1.85°F since 1895, with the greatest warming occurring in winter. Winter warming in the northern part of New Hampshire has increased 3.5°F during the past century, and in New Hampshire's southern and coastal areas, an average warming of 3°F has been recorded.
- Sea-level rise along the New Hampshire coast is occurring at a rate that is ten times faster than at anytime in the past 1000-2000 years. Tide gauge measurements show an average rate of rise of one inch every ten years..
- The frequency of severe storms and heavy rainfall events is increasing in New Hampshire. Precipitation in coastal areas also is on the rise winters are getting shorter and spring is arriving earlier. Thawing of the ice on New Hampshire's lakes is happening earlier in the year and ice-free periods are getting longer.

Projections for the Future

- The latest scientific assessment from the UN-sponsored Intergovernmental Panel on Climate Change (IPCC) projects global average surface warming of between 2.5 and 10.4°F by 2100. Average sea-level rise over the same period is predicted to be 3.5 to 34.6 inches.
- Future warming in New Hampshire is expected to be greatest in the winter months. The greatest warming to date has been in the mountains and northern New Hampshire.
- Extreme weather events such as heavy rainfall, floods, droughts, ice storms and heat waves are likely to increase in frequency and may also become more intense.

Agriculture

- Crops such as field-grown tomatoes, lettuce, broccoli, potatoes, pumpkins and cabbages, as well as fruit such as apples and pears are particularly vulnerable to increasingly variable and extreme weather conditions.
- Climate change could impose severe economic hardship on small dairy farmers in New Hampshire if they find that warmer summers force them to invest in air conditioning for barns and stalls.

Forests

- Current modeling forecasts predict that maple sugar trees eventually will be completely eliminated as a regionally important species in the northeastern United States. Even

where sugar maples are able to persist, changes in the freeze/thaw cycle are expected to reduce the quantity of syrup harvested. Maple syrup production is worth approximately $4 million annually in New Hampshire.

- Milder winters are expected to increase the vulnerability of commercial forests to insect pests -- including eastern spruce budworm, gypsy moth and pine bark beetle. The hemlock wooly adelgid is also likely to be able to move northwards into New Hampshire.
- Higher summer temperatures will contribute to greater ground-level ozone formation, thereby causing the reduction of forest productivity and damage to commercial tree species like red spruce and white pine. Ozone impacts are expected to be the worst in coastal and southern New Hampshire.
- Several species of wood warbler that breed during the summer in the north woods are expected to extend their ranges northwards, perhaps by hundreds of miles. These changes appear to have started already. Northern breeding species such as bay-breasted warbler, Cape May warbler and Tennessee warbler are particularly vulnerable.

Tourism and Recreation

- Winter snowfall is likely to decrease and ice conditions on rivers and lakes to deteriorate, thereby threatening winter recreation such as cross country and downhill skiing, snowboarding, snowmobiling and ice fishing.
- Changing temperature and precipitation patterns could harm the multi-million dollar fall foliage industry by muting autumn colors.
- Populations of cold-water fish species, including brook, brown and rainbow trout, could be dramatically reduced in many of their current stream and lake habitats as a result of warming water temperatures.

Human Health

- Summer temperatures will increase, with 90^{o} F days becoming more common. The result will be more ground-level ozone formation, and more smog alerts. As air quality worsens, hikers – particularly those with asthma or other respiratory disorders – will face a heightened health risk.
- Lyme disease poses a special threat to people who enjoy outdoor pursuits like hiking, birding and fishing. Research on ticks suggests that warmer winters could increase the incidence of the disease and push its potential range farther into New Hampshire.
- According to public health specialists from Harvard Medical School, droughts have helped West Nile Virus get established in parts of New Hampshire. Continued warming combined with increased extreme weather events is likely to increase mosquito populations and amplify the size of recurrent outbreaks.

Coastal Communities and Marine Ecosystems

- Many coastal areas will experience increased flooding, storm damage and coastal erosion. Property loss insurance claims are likely to increase dramatically in coming years.
- Important wetland wildlife habitats such as salt marshes and dune systems will be lost as a result of rising sea levels.
- Lobster populations are likely to be forced northwards as ocean temperatures increase and other fish and shellfish, including winter flounder and oyster, are likely to suffer as a result of warmer waters.