

## A few references for climate change science in New York or Northeast US

Daniels, R.A, K. Limburg, R.E Schmidt, D. Strayer and R.C. Chambers. 2005. Changes in Fish Assemblages in the Tidal Hudson River, New York. *American Fisheries Society Symposium* 45:471-503.

Historical data on over 200 species of fish in the Hudson River show dramatic changes in the last century. These changes include a decline of some native species and an increase of alien species.

Frumhoff, P.C., J.J. McCarthy, J.M. Melillo, S.C. Moser, and D.J. Wuebbles. 2007. *Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions*. Synthesis report of the Northeast Climate Impacts Assessment (NECIA). Cambridge, MA: Union of Concerned Scientists  
<http://www.northeastclimateimpacts.org/#Papers>

The Northeast Climate Impacts Assessment (NECIA) is a collaboration between the Union of Concerned Scientists (UCS) and a team of more than fifty independent experts to develop and communicate an assessment of climate change in the northeastern United States. This most recent report found that over the next several decades, temperatures across the Northeast will rise 2.5°F to 4°F in winter and 1.5°F to 3.5°F in summer regardless of the emissions choices we make now. This 160 page report addresses the impact of climate change on Northeastern coasts, marine environments, forests, agriculture, winter recreation and human health. Many more scientific papers from these collaborators are available on the website.

Gibbs, J.P. and A.R. Breisch. 2001. Climate Warming and Calling Phenology of Frogs near Ithaca, New York, 1900-1999. *Conservation Biology* 15 (4): 1175-1178

Historical and recent data suggest that the warmer climate in New York since 1900 has led to earlier breeding in some amphibians, as recorded by frog calling. Frog reproduction is particularly sensitive to temperature, making the results of this research one of the first biotic responses to climate change.

Hartig, E.K., V. Gornitz, A. Kolker, F. Mushacke and D. Fallon. 2002. Anthropogenic and Climate-Change Impacts on Salt Marshes of Jamaica Bay, New York City. *Wetlands* 22(1): 71-89.

Authors use self studies and aerial photographs to show rapid deterioration of the Jamaica Bay salt marshes in New York City near JFK airport. Such losses may be caused by several factors, including reduced sediment input, dredging for navigation channels, boat traffic, and regional sea-level rise.

Seekel, D. and M. Pace. 2007. Institute of Ecosystem Studies, in press.

Swaney, D.P., K.E. Limburg and K. Stainbrook. 2006. Some Historical Changes in the Patterns of Population and Land Use in the Hudson River Watershed. *American Fisheries Society Symposium* 51:75-112

Authors use various data sources and types to describe the Hudson River watershed. Specifically, they discuss population size, agricultural and forested land uses, and the construction of dams since European colonization.