Climate Change Impacts and Projections for the Greater Boston Area

GRCx is an interactive program series from the Boston Green Ribbon Commission designed to accelerate the implementation of the City's Climate Action Plan by providing high-quality, useful content on climate resilience and carbon mitigation to the Boston community.







Paul Kirshen
Professor of Climate
Adaptation
UMass Boston School for
the Environment



Ellen Douglas
Associate Dean
Professor of Hydrology
UMass Boston School for
the Environment



Rob DeConto
Professor
Co-Director
UMass Amherst School of
Earth & Sustainability



Ambarish Karmalkar
Affiliated Investigator
Research Assistant
Professor
UMass Amherst College
of Natural Sciences



Mathew Barlow Professor UMass Lowell College of Sciences



Jayne Knott
Principal and Senior
Scientist
JFK Environmental
Services LLC

Climate Change Impacts and Projections for the Greater Boston Area Report Overview

Paul Kirshen and Ellen Douglas

GRCx

July 22nd, 2022



BRAG and **GBRAG** Reports



Climate Change and Sea Level Rise Projections for Boston



The Boston Research Advisory Group Report



JUNE 1, 2016





Mayor Martin J. Walsh





Climate Change Impacts and Projections for the Greater Boston Area

ELLEN DOUGLAS, PhD, PAUL KIRSHEN, PhD



Findings of the Greater UMass School for the Environment Boston Research Advisory **Group Report**

Report Team

Project Leadership

Ellen Douglas, School for the Environment, UMass Boston; Ellen.Douglas@umb.edu Paul Kirshen, School for the Environment, UMass Boston; Paul.Kirshen@umb.edu

Project Administrator

Kimberly Starbuck, Urban Harbors Institute, UMass Boston

Stakeholder Engagement and Outreach Team

Kristin Uiterwyk, Urban Harbors Institute, UMass Boston, Team Leader
Kimberly Starbuck, Urban Harbors Institute, UMass Boston
Paul Kirshen, School for the Environment, UMass Boston
Betsy Sweet, Urban Planning and Community Development, UMass Boston
Anna Valdez, School for the Environment, UMass Boston
Darci Schofield, Metropolitan Area Planning Council

Temperature Team

Evan Kodra, risQ Inc., Team Leader
Kate Duffy, NASA Ames Research Center
Ryan Grieser, risQ Inc.
Ambarish Karmalkar, Department of Geosciences, UMass Amherst
Terry Tabors, risQ Inc.
Mary Warner, Northeastern University

Storms, Precipitation, Flooding, and Groundwater Team

Mathew Barlow, UMass Lowell, Team Leader
Laurie Agel, UMass Lowell

Mathias Collins, National Oceanic and Atmospheric Administration
Art DeGaetano, Cornell University

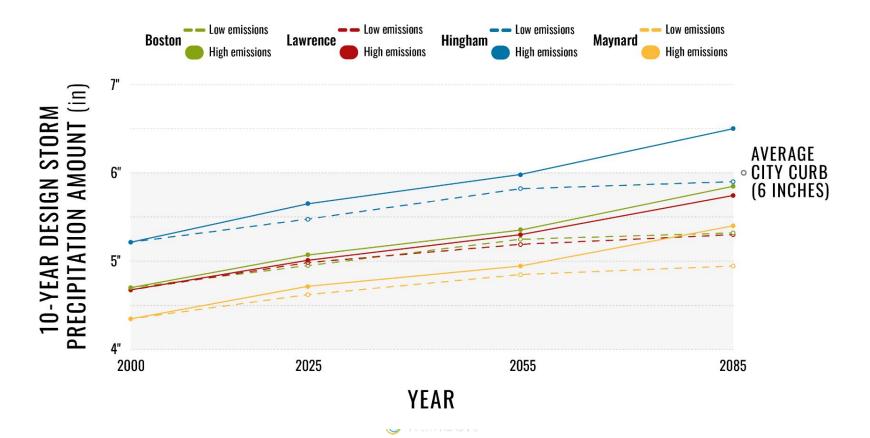
Jayne Knott, JFK Environmental Services LLC

Ambarish Karmalkar, UMass Amherst

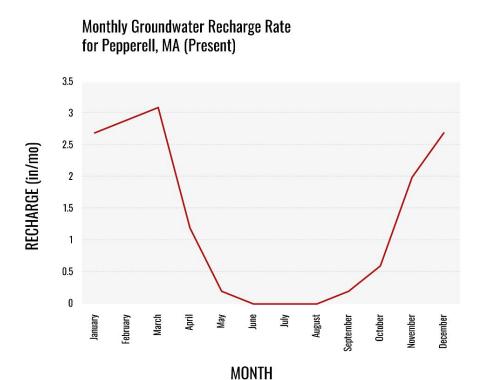
Sea Level Rise Team

Robert DeConto, UMass Amherst, Team Leader Hannah Baranes, UMass Amherst Jon Woodruff, UMass Amherst Anna Ruth Halberstadt, UMass Amherst Robert Kopp, Rutgers University

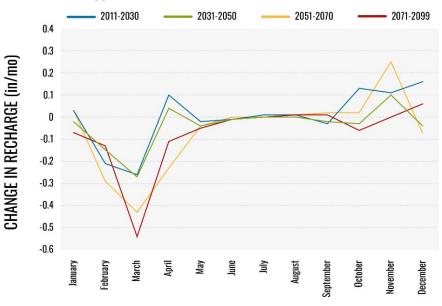
PROJECTED INCREASES IN PRECIPITATION



PROJECTED CHANGES TO GROUNDWATER RECHARGE

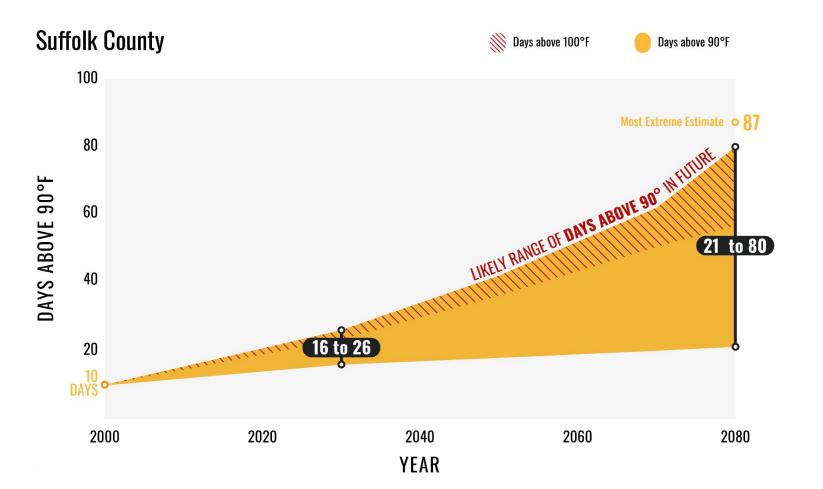


Projected Changes in Monthly Groundwater Recharge for Pepperell, MA



MONTH

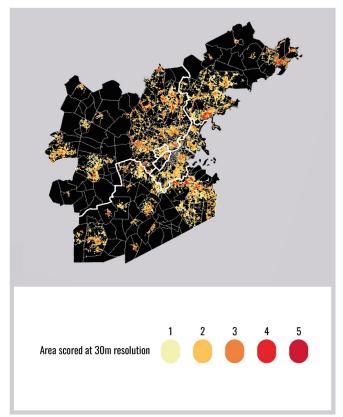
PROJECTED CHANGES IN EXTREME TEMPERATURE DAYS ACROSS MASSACHUSETTS



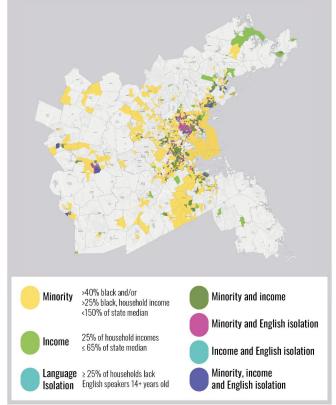
DISPROPORTIONATE IMPACT OF EXTREME HEAT ON VULNERABLE POPULATIONS

URBAN HEAT ISLANDS IN THE MAPC REGION (2020)

Thinner white lines define census tract boundaries. Thicker white lines define the boundaries of the 4 counties of the MAPC region.



ENVIRONMENTAL JUSTICE COMMUNITIES IN THE MAPC REGION (2020)



LIKELY RANGE OF PROJECTED SEA LEVEL RISE FOR BOSTON AREA

