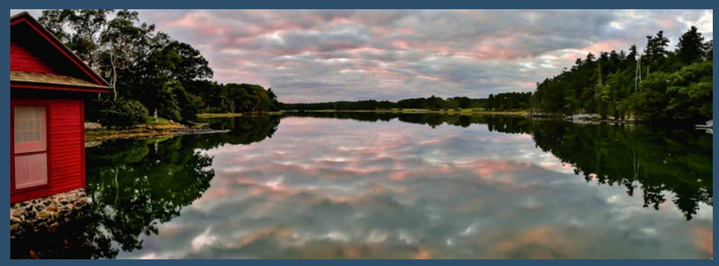


YORK RIVER AND CLIMATE CHANGE

Maintaining river health and important functions will require continued proactive protection, planning, and infrastructure investments.

How conditions are changing

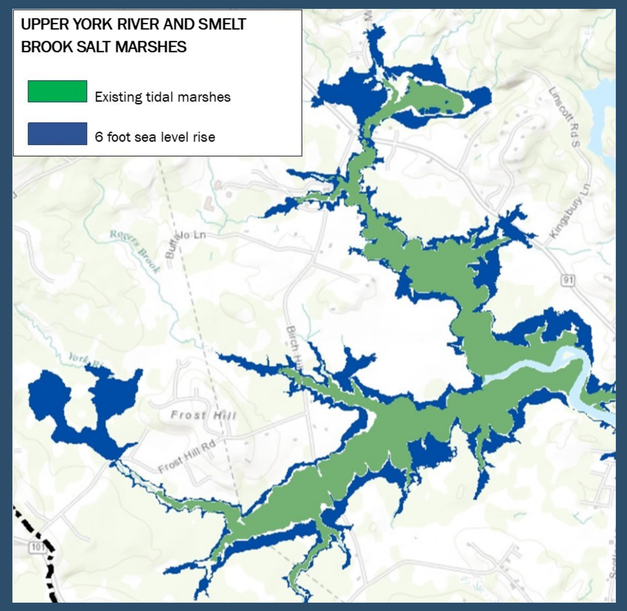
SEA LEVEL RISE — The Intergovernmental Panel on Climate Change predicts sea levels in the Gulf of Maine will increase 1.2 ft to 10.9 ft by 2100 based on varying assumptions about future greenhouse gas emissions.[1]

MORE INTENSE STORMS AND FLOODING — In New England, more intense storms over the last 50 years have led to large-scale flood events[2], and more precipitation falling as rain not snow may lead to higher rates of erosion.[3]

WARMER AND MORE ACIDIC OCEAN WATER — Over the last decade, the Gulf of Maine has warmed faster than 99 percent of the global ocean.[4] Changes in water temperature and chemistry impact marine life and coastal fisheries.

River functions and community assets that could be at risk

Clean water · Salt marshes · Flood protection · Aquatic and wildlife habitats · Shore access/trails
Working waterfront · Historic sites · Species diversity · Groundwater · Property values · Infrastructure



Actions to address climate change

— SUSTAIN NATURAL RESILIENCY —

Resiliency is a measure of a system's ability to absorb stresses and maintain functions. Healthy salt marshes, natural stream buffers, and undeveloped floodplains enhance our river's resiliency to climate change impacts.

A study of over 10,000 coastal sites rated York River's salt marshes in the top 1% for their resilience[5] — meaning there is a high likelihood these marshes can still provide critical nursery and forage habitats, protect against coastal flooding, stabilize shorelines, and help provide clean water in the future.

Examples of actions to **sustain resiliency**:

- ◊ Limit fragmentation of marsh habitat
- ◊ Conserve undeveloped areas where marshes can migrate
- ◊ Maintain natural stream connectivity and adequate tidal flows
- ◊ Avoid development of floodplains, shorelines, and steep slopes

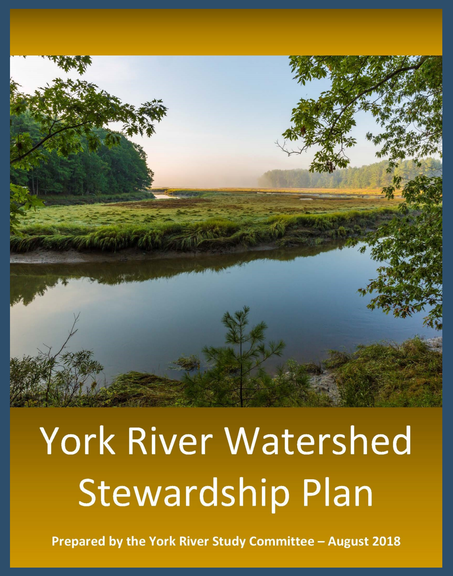
Actions to address climate change

— IMPLEMENT ADAPTATION MEASURES —

Adaptation measures aim to reduce vulnerability to effects of climate change such as greater flooding.

Examples of **adaptation strategies** used by coastal communities to address current and future climate threats:

- ◊ Implementing green infrastructure projects to reduce runoff and stormwater flows
- ◊ Replacing undersized culverts to accommodate stream flows and tides during storm events
- ◊ Retreating from low lying, flood prone areas and moving structures out of floodplains
- ◊ Restoring marsh habitat and wetlands
- ◊ Changing building codes, updating ordinances, and rezoning



The York River Watershed Stewardship Plan includes information and recommendations for a healthy and vibrant river system. For more information:

www.YorkRiverMaine.org

YORK RIVER STUDY COMMITTEE

Photos: Chuck Maranhas (top left), Jerry Monkman / Ecophotography.com (middle left and right), and Wayne Boardman (bottom center)

References:

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4: Gulf of Maine, Explained: The Warming Gulf of Maine. 2018. Andrew Pershing. Gulf of Maine Research Institute. www.gmri.org/news/blog/gulf-maine-explained-warming-gulf-maine

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