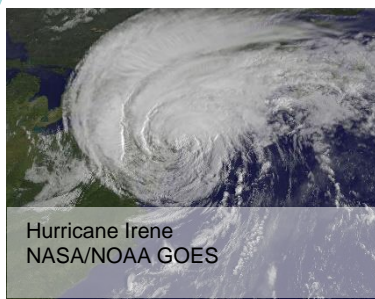


Managing Rivers: Why We Care

How river science can help
you save lives and money.



Great Gale 1815, Providence
John Russell Bartlett, RI Historical Society



Hurricane Irene
NASA/NOAA GOES

In 2011, Tropical Storm Irene destroyed buildings, land, and lives, costing Massachusetts \$195 million in damages. This was not an isolated event. New England has experienced destructive, deadly, and expensive floods throughout its history. The total cost is in the billions of dollars and thousands of lives lost.



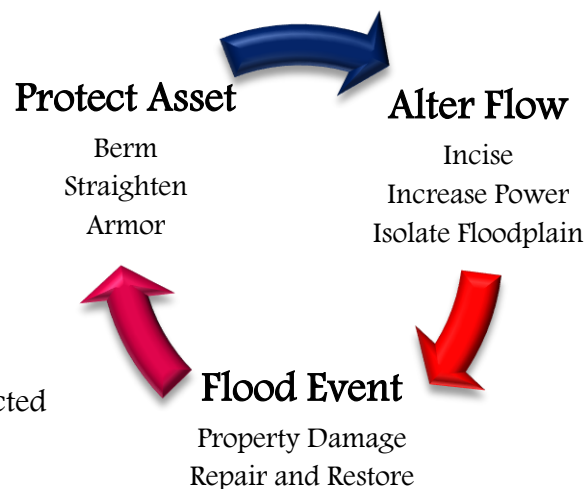
Connecticut River Floods Hartford
1938 Hurricane
www.erh.noaa.gov

Traditional flood management focuses on protecting specific assets, creating a cycle of rising costs:

- Property and infrastructure are at risk
- Channels are bermed, straightened, or armored
- This work alters river patterns, increasing instability
- Storm flows undermine protection measures
- Property and infrastructure are again at risk

The more money invested in a road or building, the more important it becomes to continue that protection. Costs spiral, budgets are drained by a few essential projects, and other affected parties are left without options.

Cycle of Rising Costs



This cycle may be broken by incorporating an understanding of the relationship between river processes and human investments into decision-making, funding mechanisms, and regulations.



Sources:

- MEMA, 2015. New England Hurricanes of Note. Massachusetts EOPSS, www.mass.gov/eopss/agencies/mema
- NOAA, 2011. Service Assessment: Hurricane Irene, August 21-30, 2011. USDOC. Nws.noaa.gov
- Pealer, 2014. Lessons from Irene: Building Resiliency as we Rebuild. VTANR