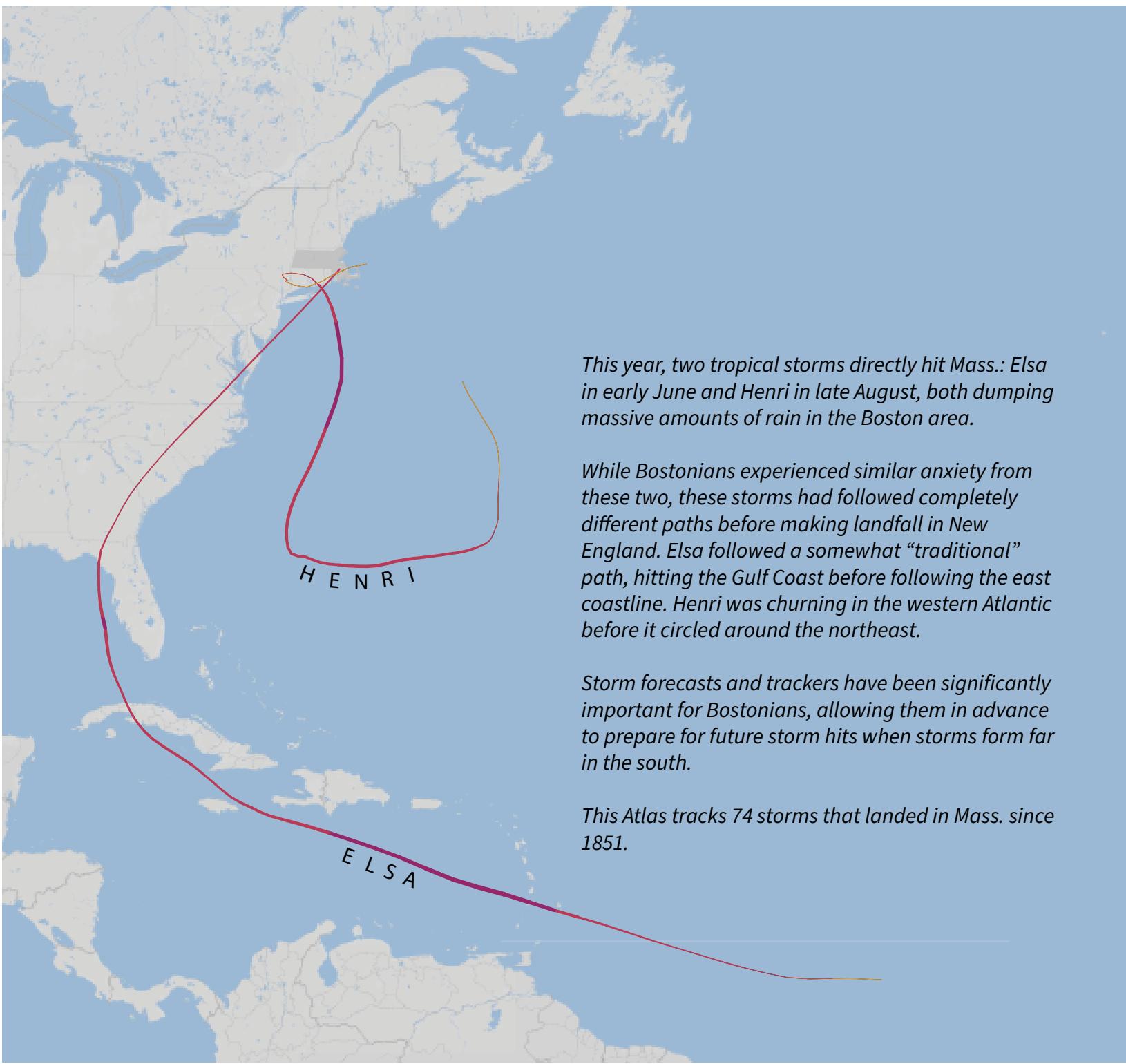


# 74 storms hitting MA: Where they came from and where they were going

Part of Boston Water Atlas  
By Yuriko Schumacher



# Storm paths by decade

## Hurricane Scale Information

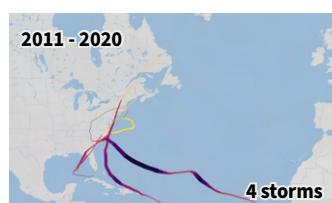
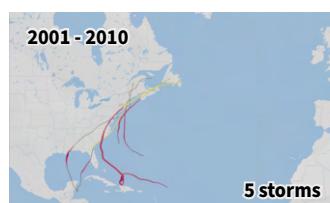
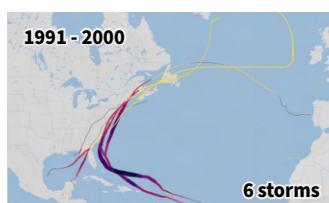
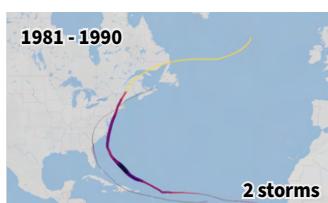
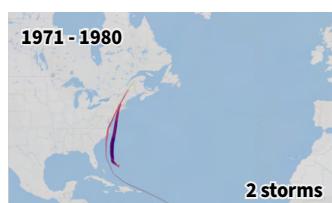
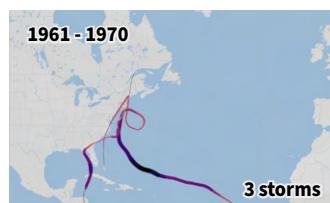
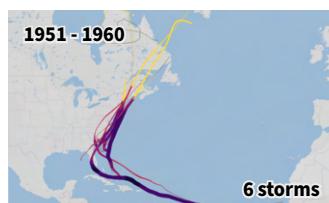
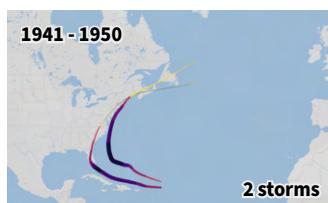
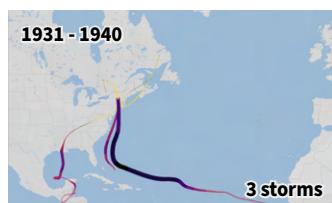
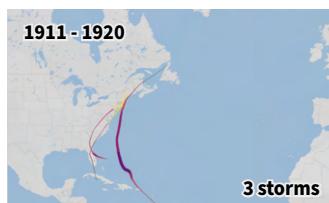
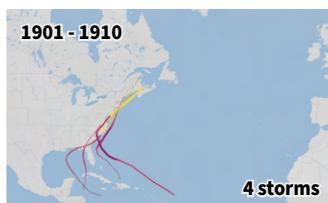
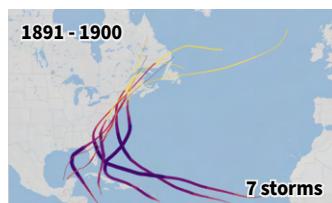
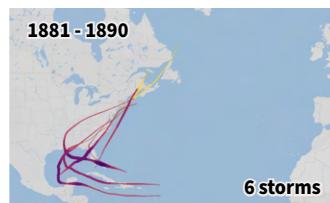
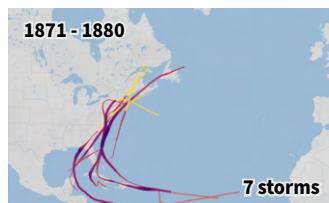
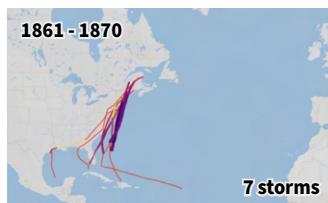
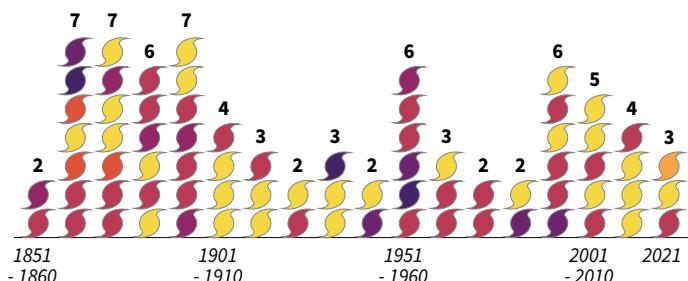
- Post-tropical
- Miscellaneous disturbances
- Tropical Depression
- Tropical Storm
- Category 1 Hurricane
- Category 2 Hurricane
- Category 3 Hurricane
- Category 4 Hurricane
- Category 5 Hurricane

## Max wind speed

0 knt 140 knt

## Number of storms that landed in MA, by decade

Color = Hurricane Scale Information when landed in MA



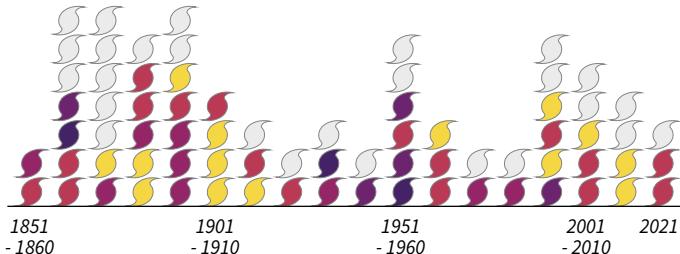
Source: IBTrACS

# Two in three storms had hit Long Island or New England shorelines before entering MA

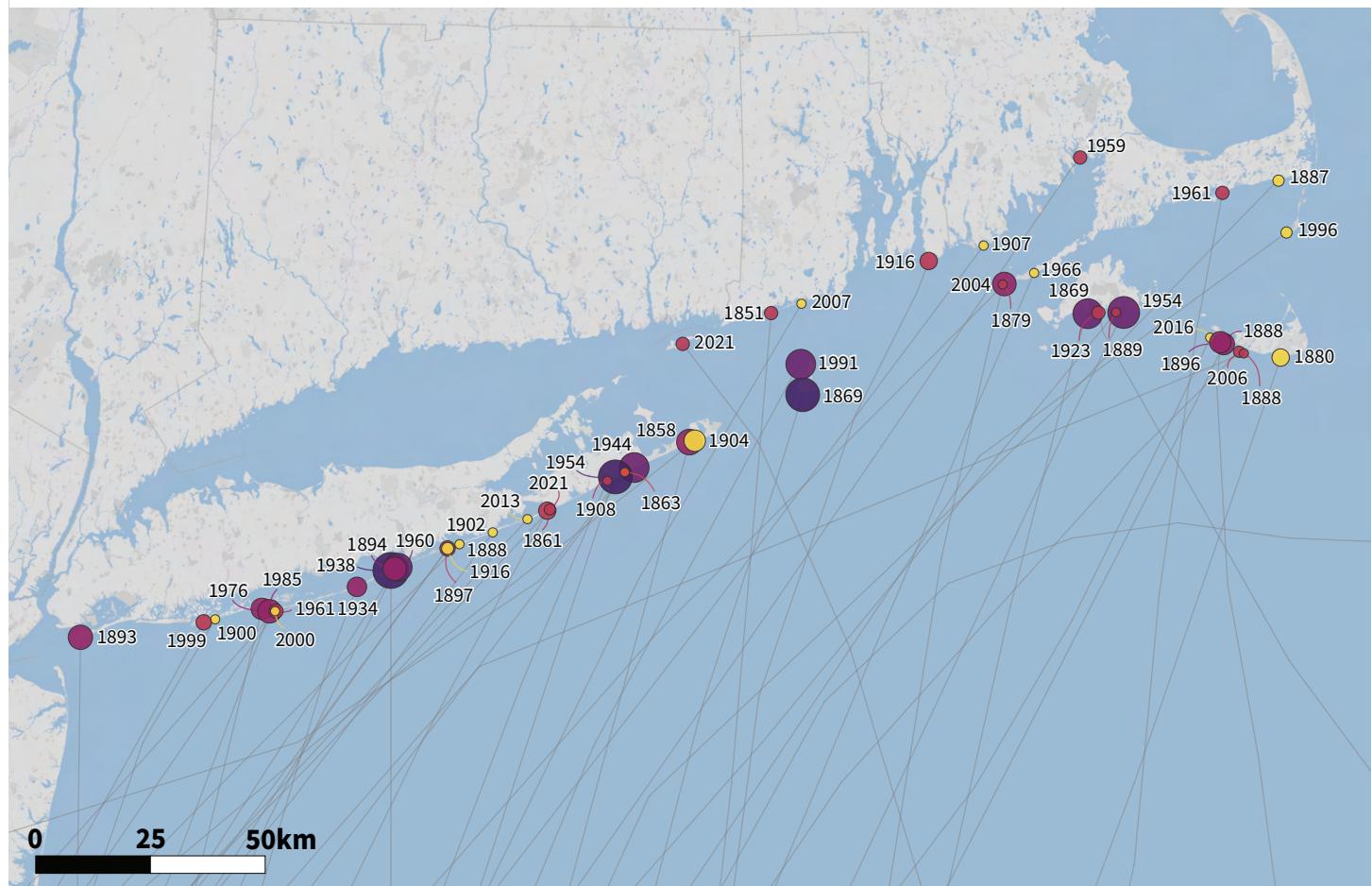
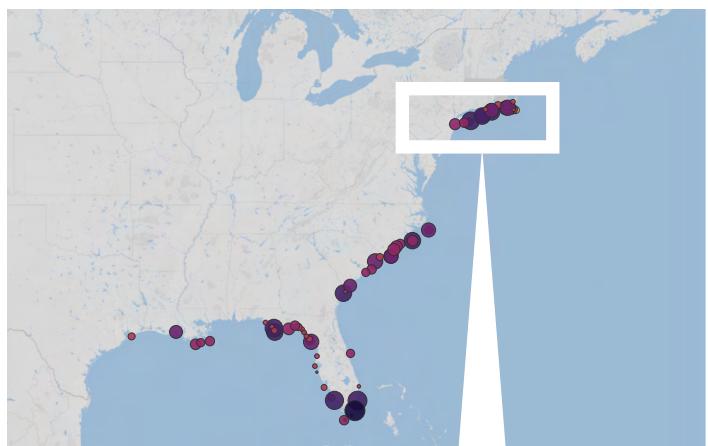
## Storms entered through Long Island and New England shorelines

🌀 = Storms landed in MA through inland

Color = Hurricane Scale Information when crossing the shoreline



Before hitting Massachusetts, storms traveled from everywhere. The first points where storms made landfall on the coastline of the mainland U.S., range from as far as east Texas to Cape Cod. Of all 74 storms that directly hit Massachusetts, 48 came from Long Island, New York, or New England shorelines.



Source: IBTrACS

# 4-day total rainfall of five hurricanes since 1948

As far back as NOAA's hourly precipitation data are available, since 1948, there have been five hurricanes that directly hit Massachusetts: Carol (1954), Edna (1954), Donna (1960), Gloria (1985), and Bob (1991). These maps show the total 4-day rainfall in inches, two days before and after the storms hit Massachusetts.

## Hurricane Scale Information

- 🟡 Post-tropical
- 🔴 Tropical Storm
- 🟣 Category 1 Hurricane
- 🟧 Category 2 Hurricane
- 🟨 Category 3 Hurricane

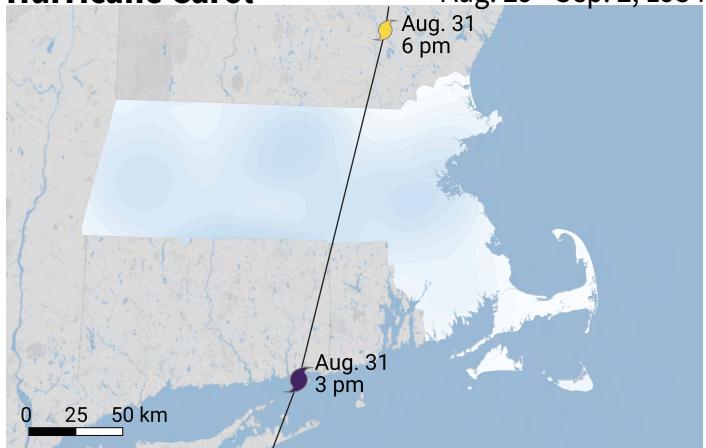
## 4-day cumulative precipitation (inches)



2.4                    18.0                    33.6

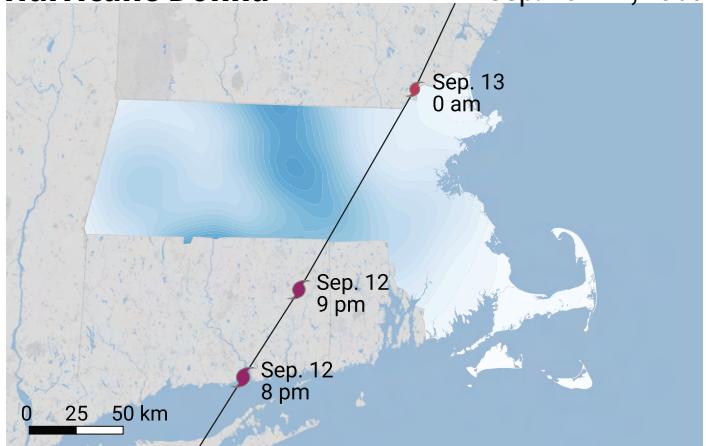
### Hurricane Carol

Aug. 29 - Sep. 2, 1954



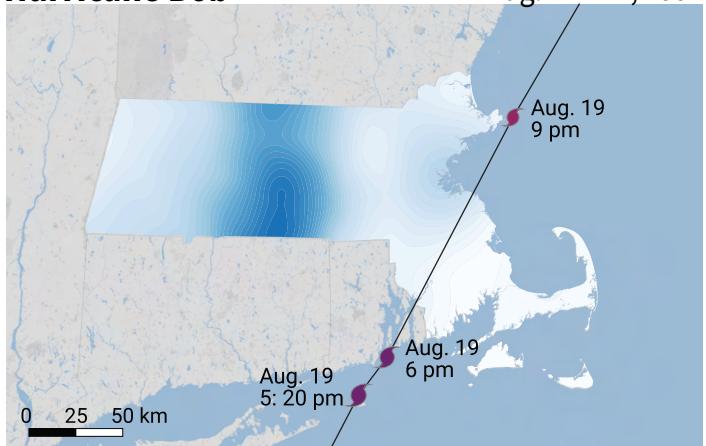
### Hurricane Edna

Sep. 9 - 13, 1954



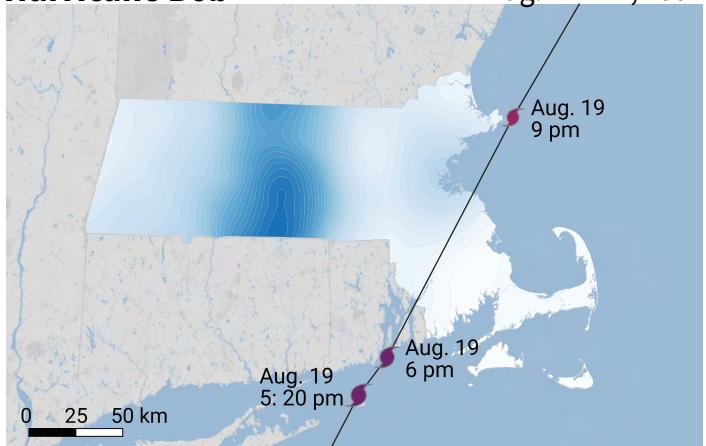
### Hurricane Donna

Sep. 10 - 14, 1960



### Hurricane Gloria

Sep. 25 - 29, 1985



### Hurricane Bob

Aug. 17 - 21, 1991

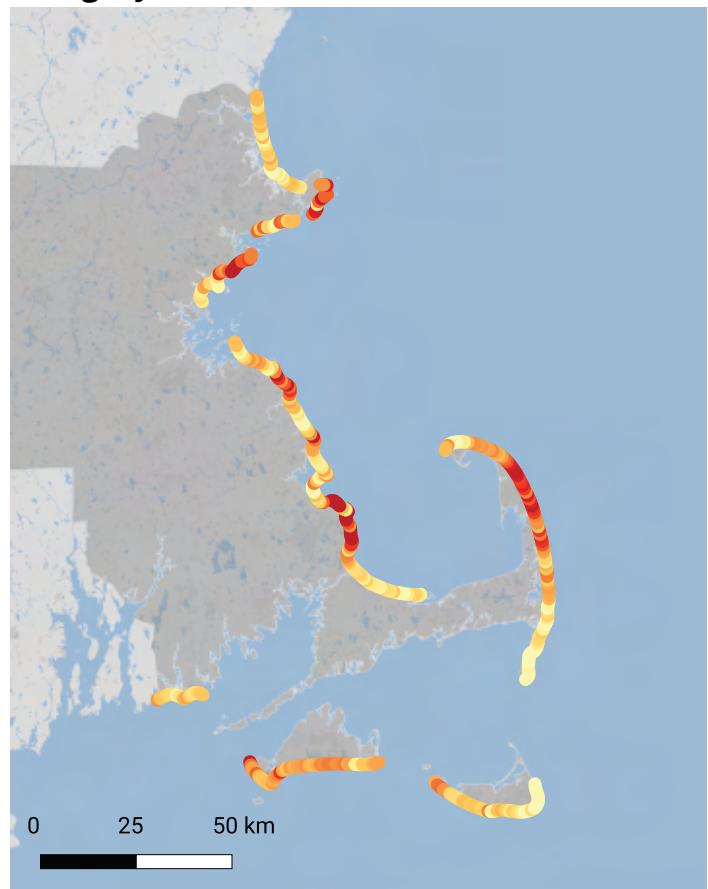
# Extreme water level hazard in MA shorelines in hurricane situations

These three maps show extreme water level (Runup + Surge) in hurricane situations (category 1 to 3). Shorelines along with Provincetown are among the most vulnerable to extreme water level in hurricanes.

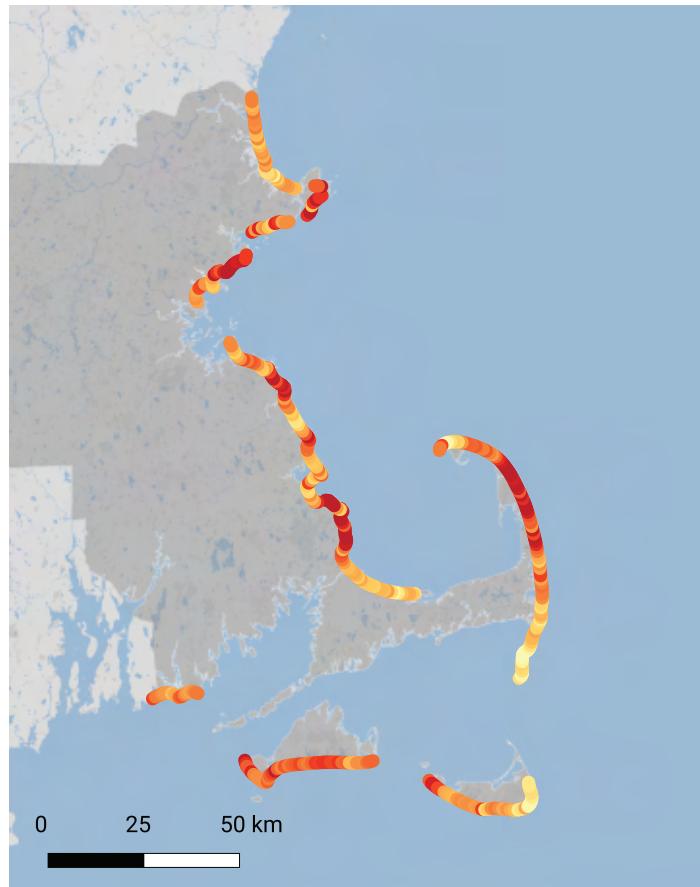
Extreme water level (Runup + Surge)



Category 1 Hurricane Situation



Category 2 Hurricane Situation



Category 3 Hurricane Situation

