

**SCENIC
HUDSON**

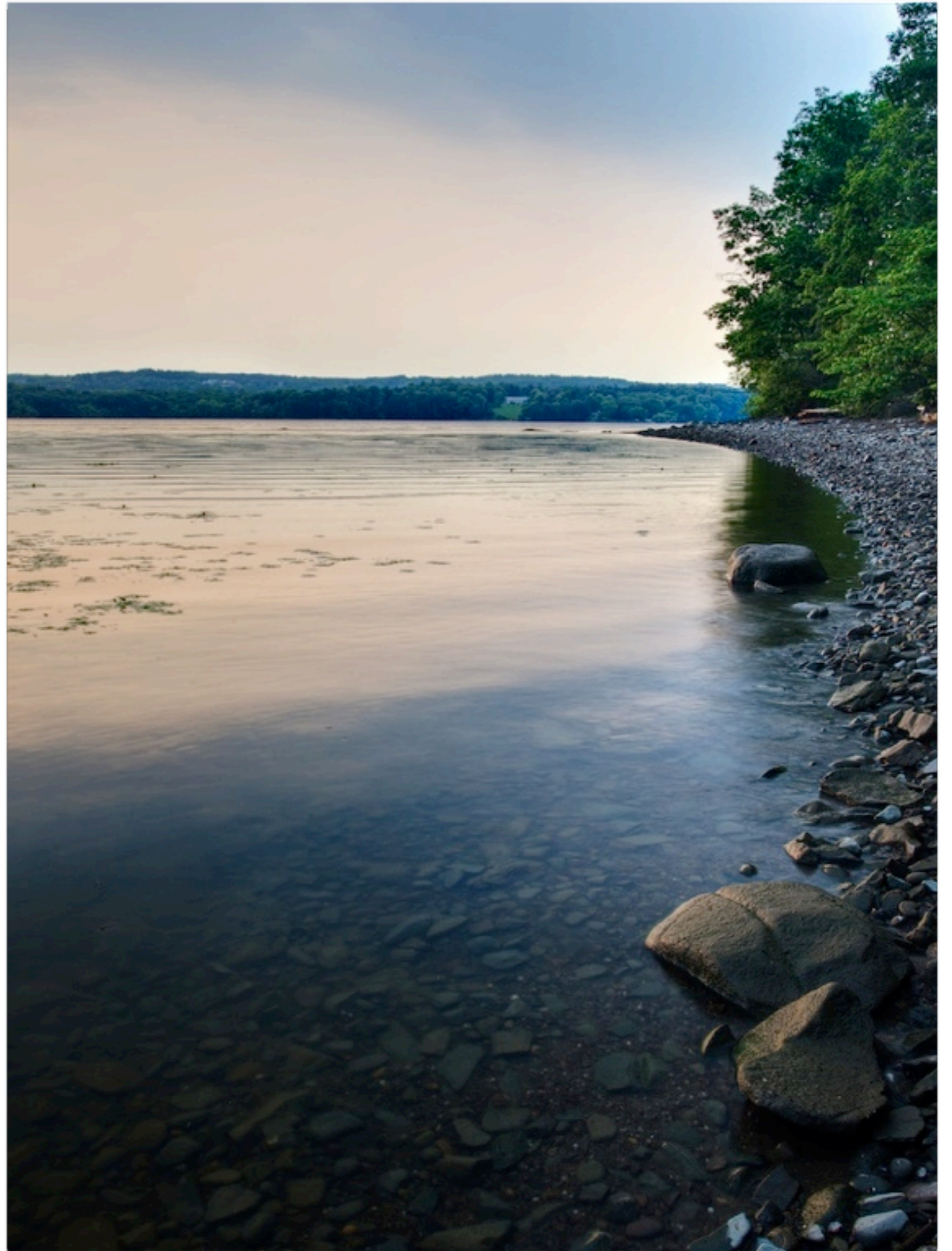
land ■ parks ■ advocacy

COASTAL HAZARDS AND CLIMATE CHANGE

THE HUDSON RIVER

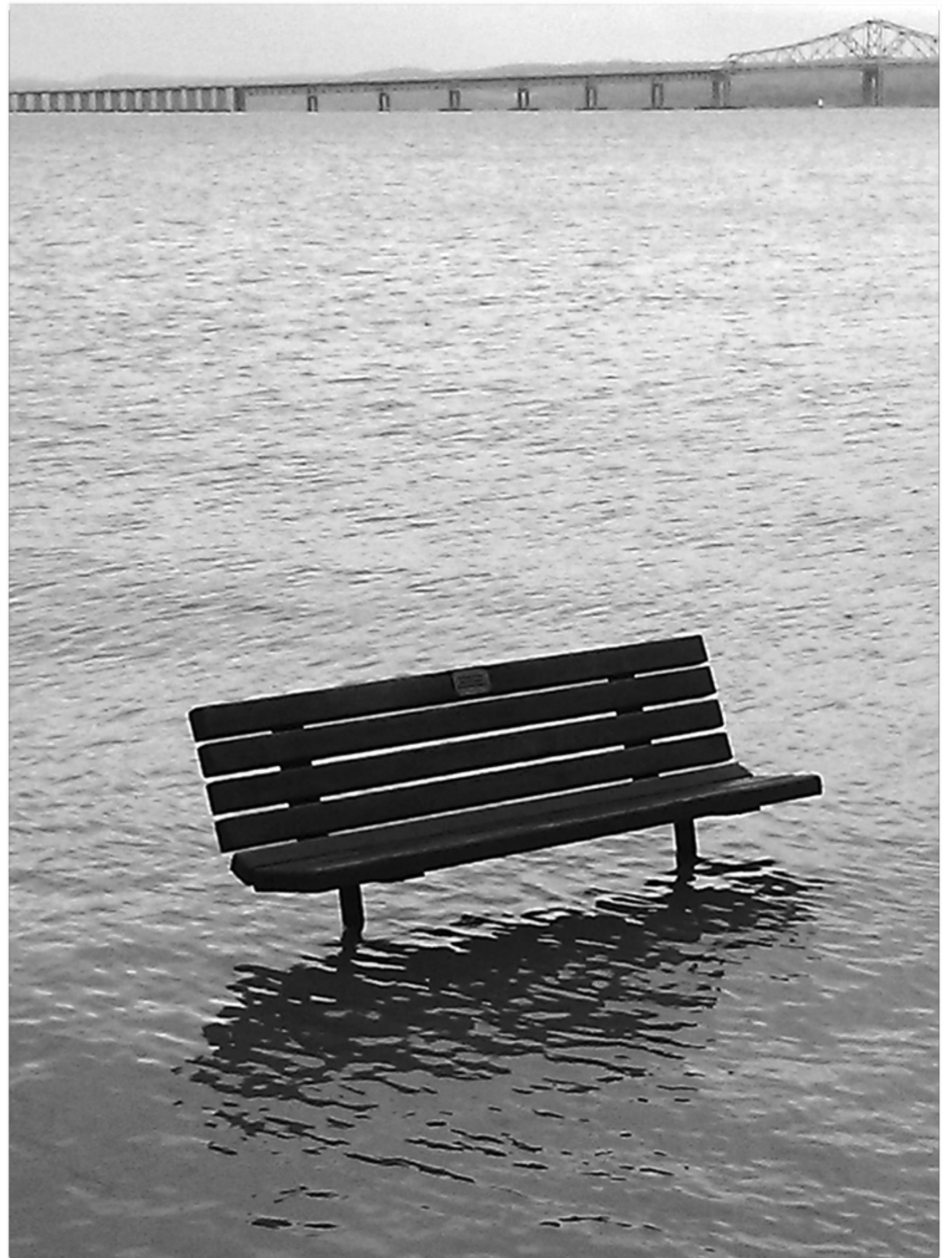
A COASTAL, TIDAL RIVER

- ▶ The Hudson River is an arm of the Atlantic Ocean
- ▶ The river tidal to the federal dam in Troy
- ▶ All of the Hudson's shorelines are subject to coastal hazards

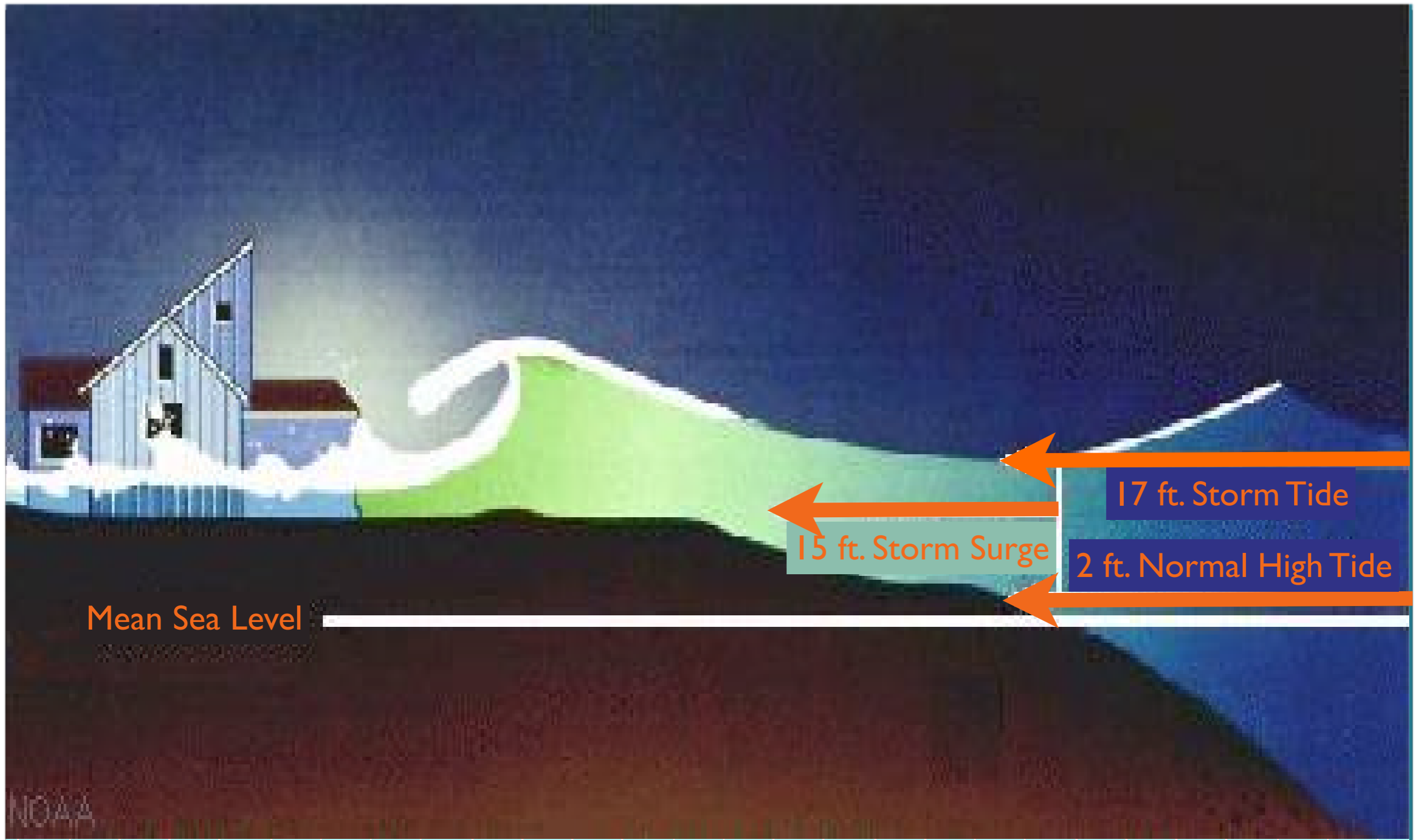


COASTAL HAZARDS

- ▶ INUNDATION
- ▶ EROSION
- ▶ FRESHWATER TRIBUTARY FLOODING

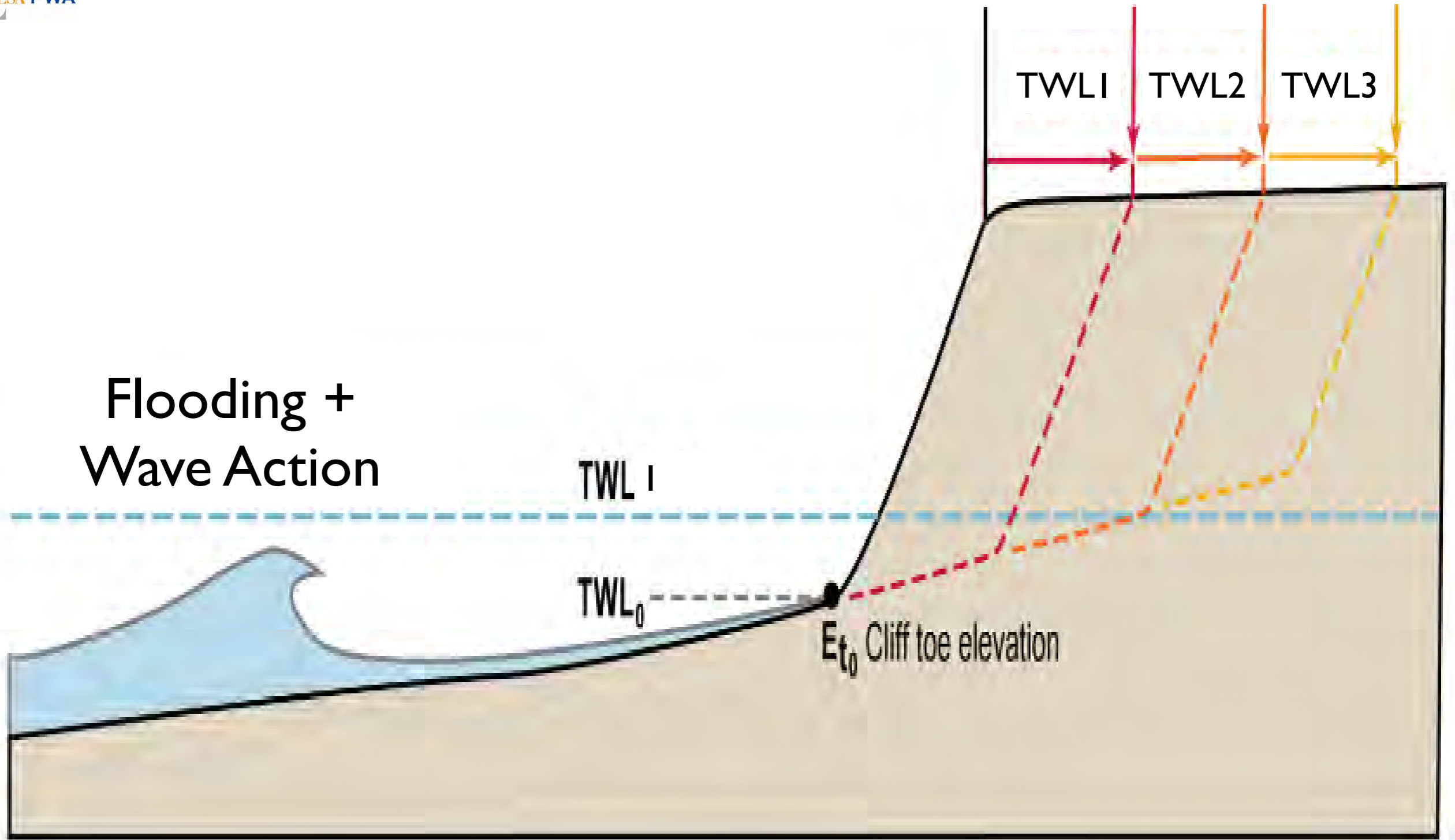




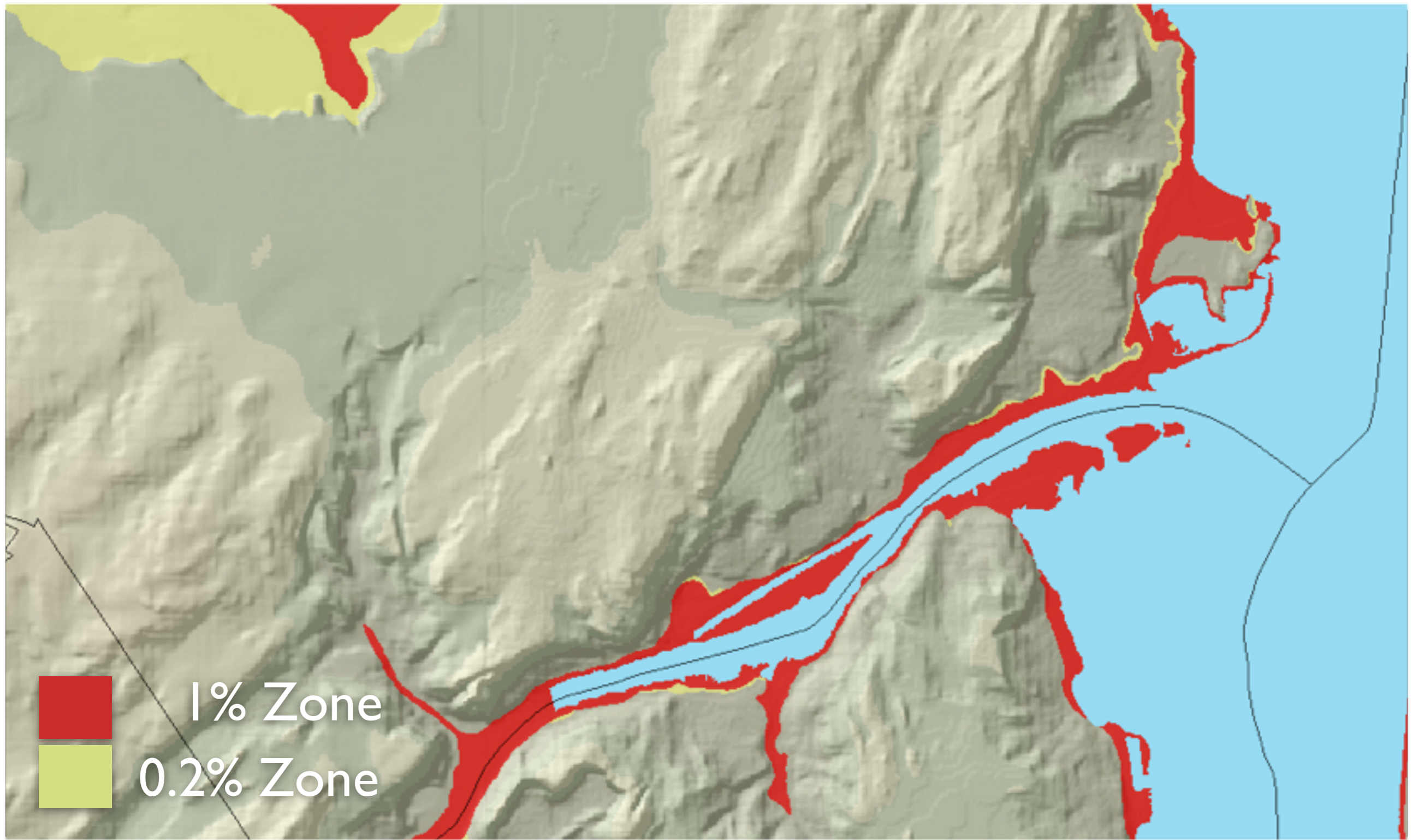




Flooding + Wave Action



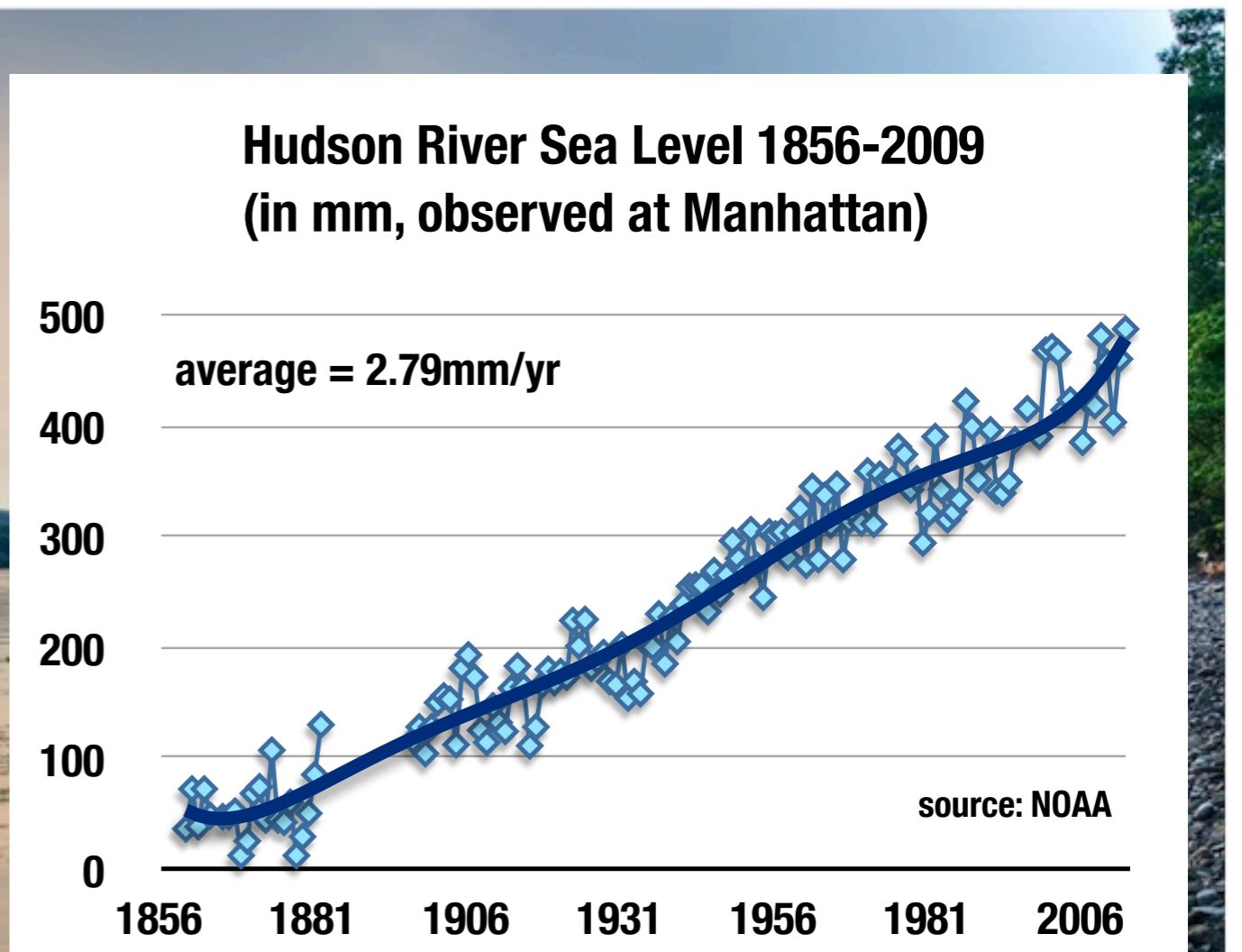




CLIMATE CHANGE

SEA LEVEL RISE

- ▶ Sea level is 1' higher than 100 years ago
- ▶ Rate of sea level rise is accelerating
- ▶ Up to 50 inches of sea-level rise by 2080



2080 projections:

8-23 inches (lower emissions)

37-50 inches (higher emissions)

CLIMATE CHANGE

STORM SURGE EVENTS

- ▶ Number or frequency of events: trend unclear
- ▶ Higher intensity events
- ▶ Greater frequency of surge events in warmer years

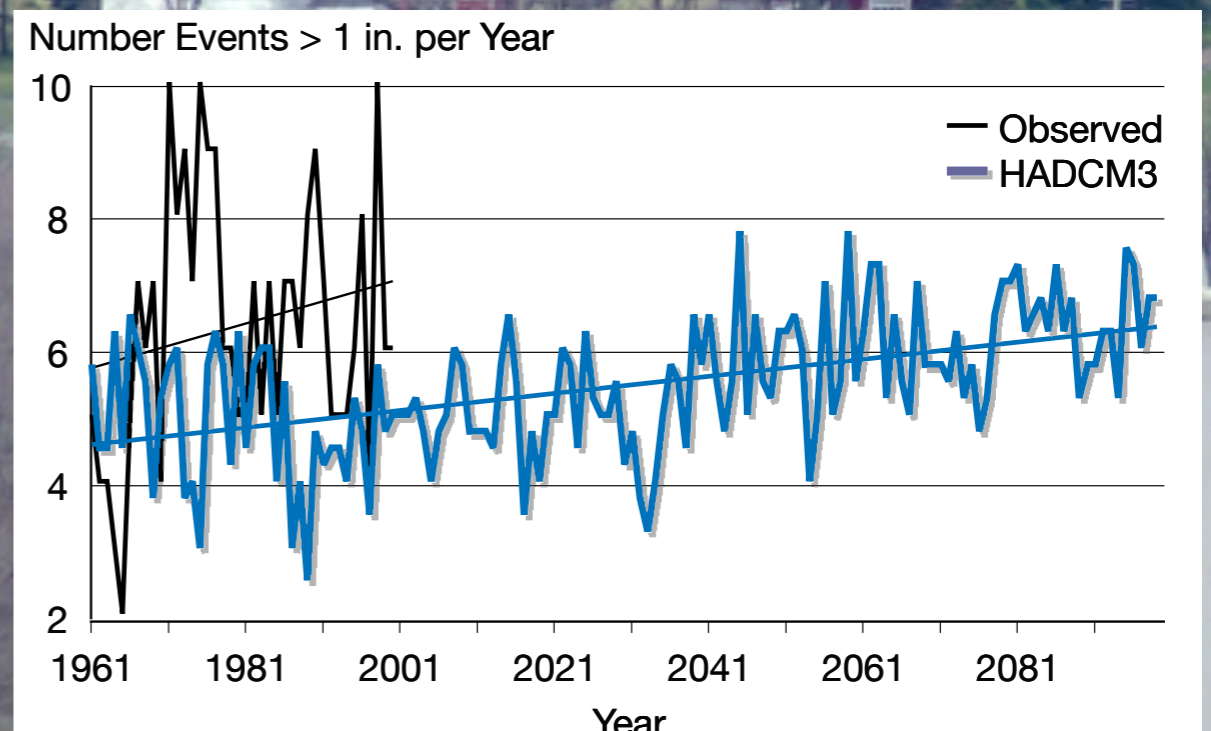
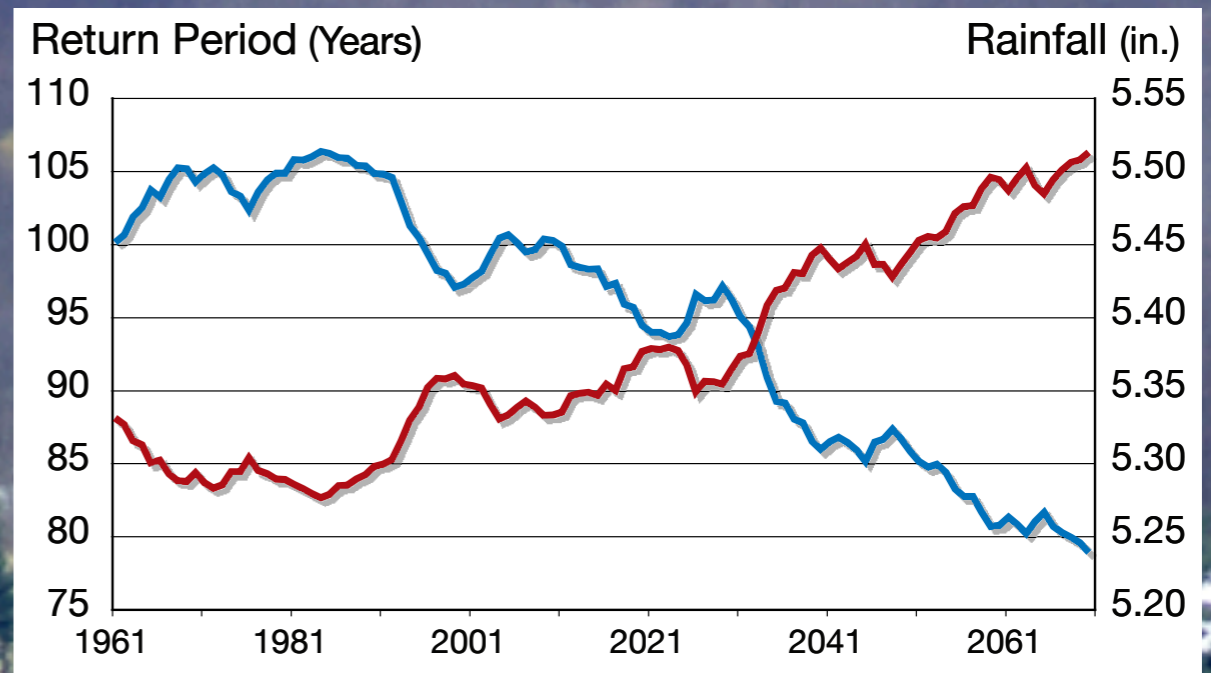


CLIMATE CHANGE PRECIPITATION REGIME

- ▶ Sea level is 1' higher than 100 years ago
- ▶ Rate of sea level rise is accelerating
- ▶ Up to 50 inches of sea-level rise by 2080

OUR WORK IN A CHANGING CLIMATE

- ▶ changing, "flashier" moist regime



2100 projections:
increased precipitation
larger, more intense events

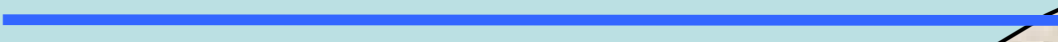
New 100-yr Flood Elevation with Sea Level Rise



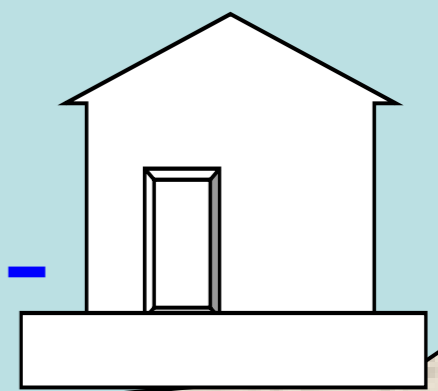
100-yr Flood Elevation

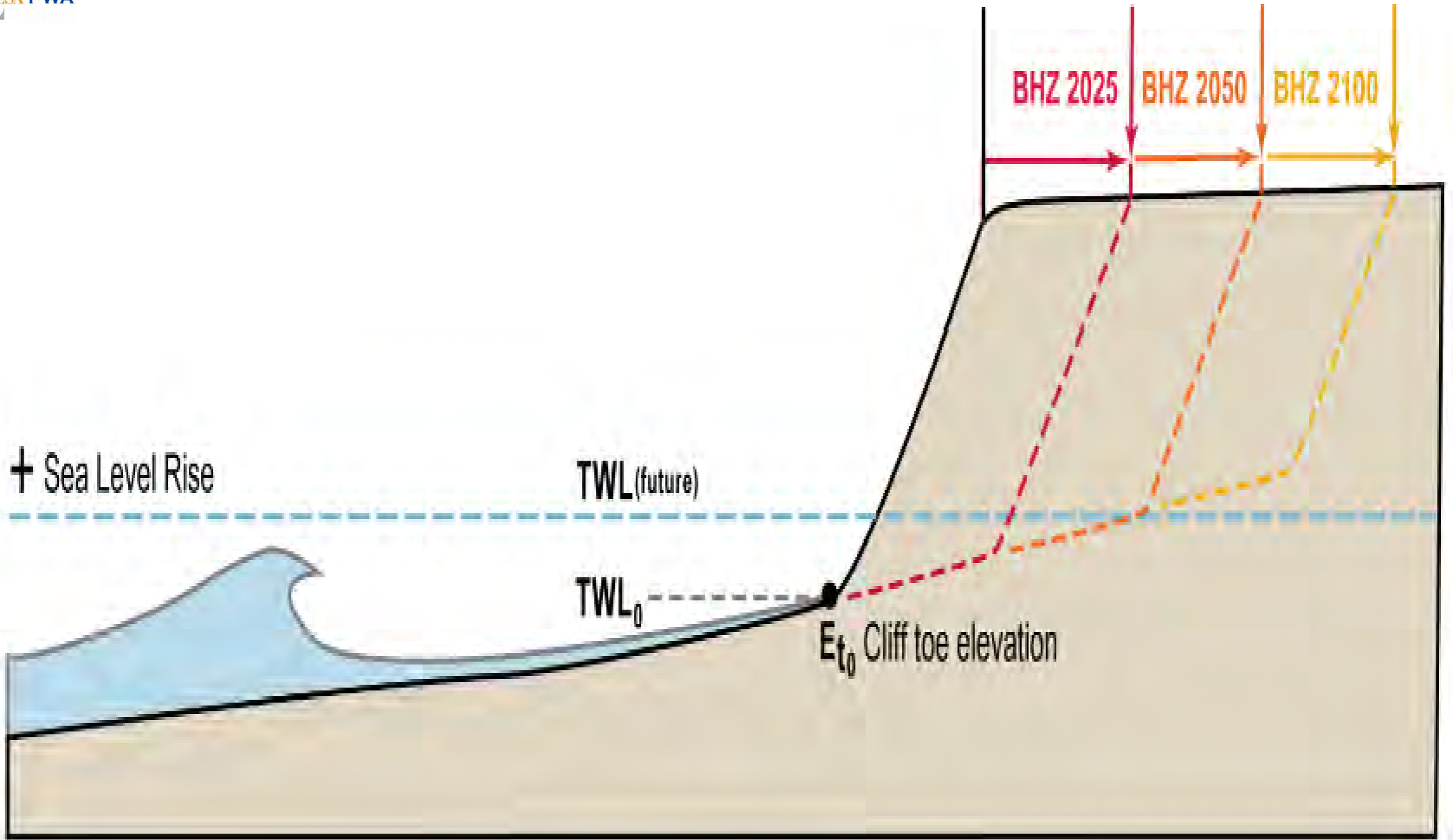


Wave height



100-yr Still-Water Elevation





+ Sea Level Rise

TWL (future)

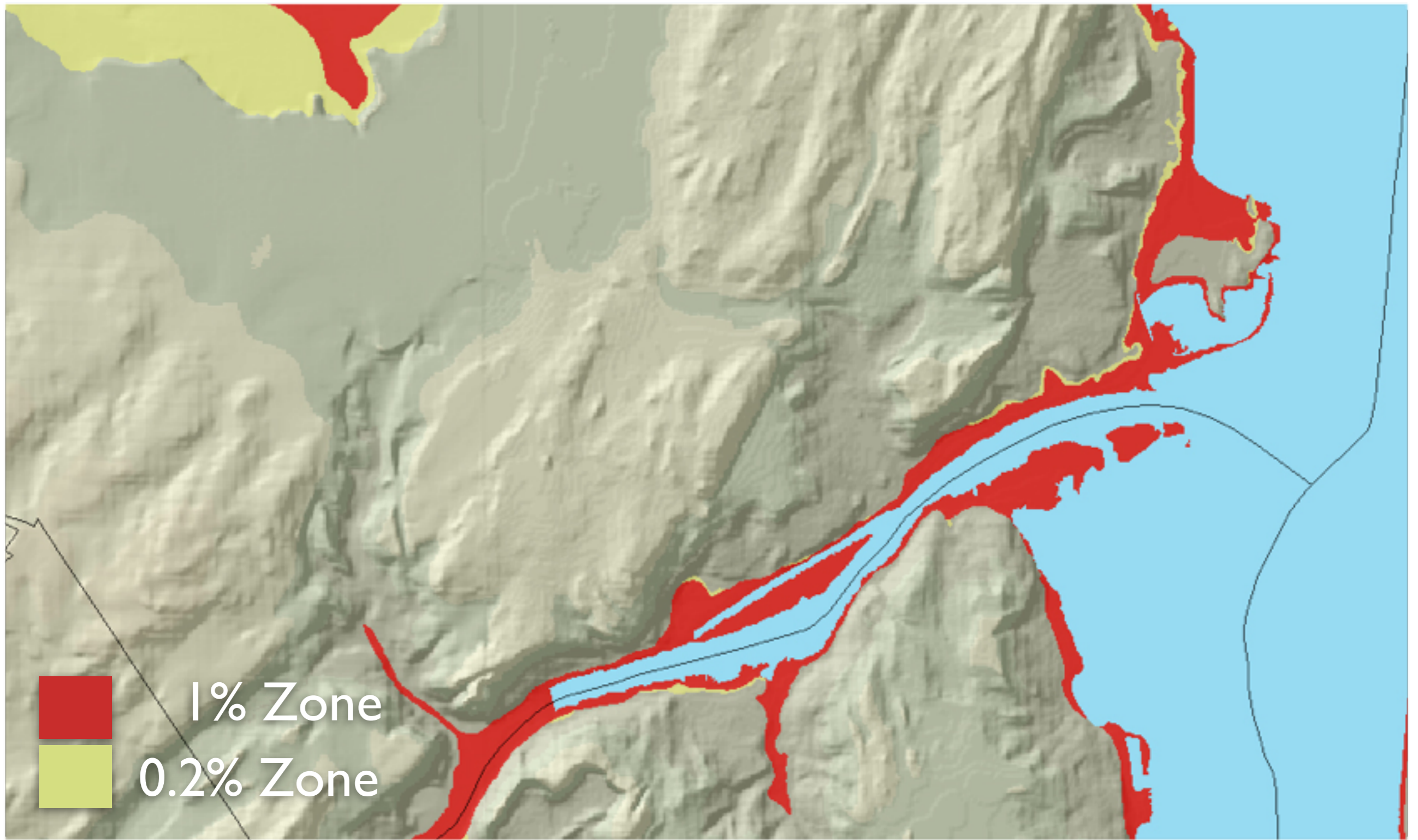
TWL_0

E_{t_0} Cliff toe elevation

BHZ 2025

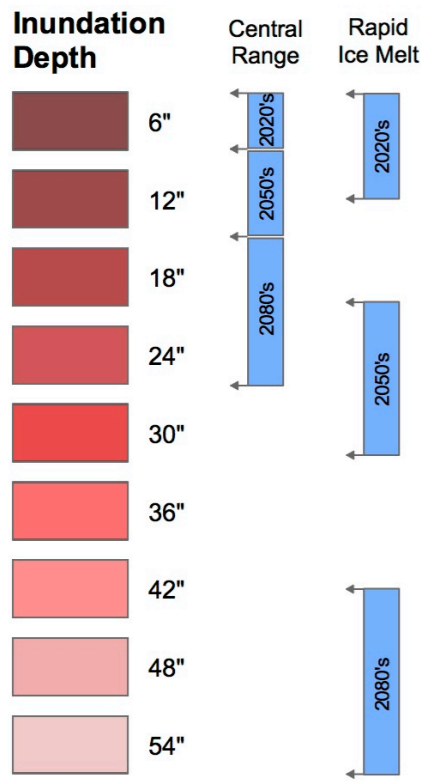
BHZ 2050

BHZ 2100



Legend

- Railroad
- Hard Shoreline
- ~~~~~ Natural Shoreline
- Light Blue Hudson River (Sea Level)
- Dark Blue Hudson River (MHHW)



- Orange FEMA 100 year Floodplains
- Yellow Modeled 100 year Floodplains (48")

