The National Environmental Education Committee
and the
Environmental Foundation of Jamaica

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CLIMATE CHANGE AND COASTAL RESOURCES

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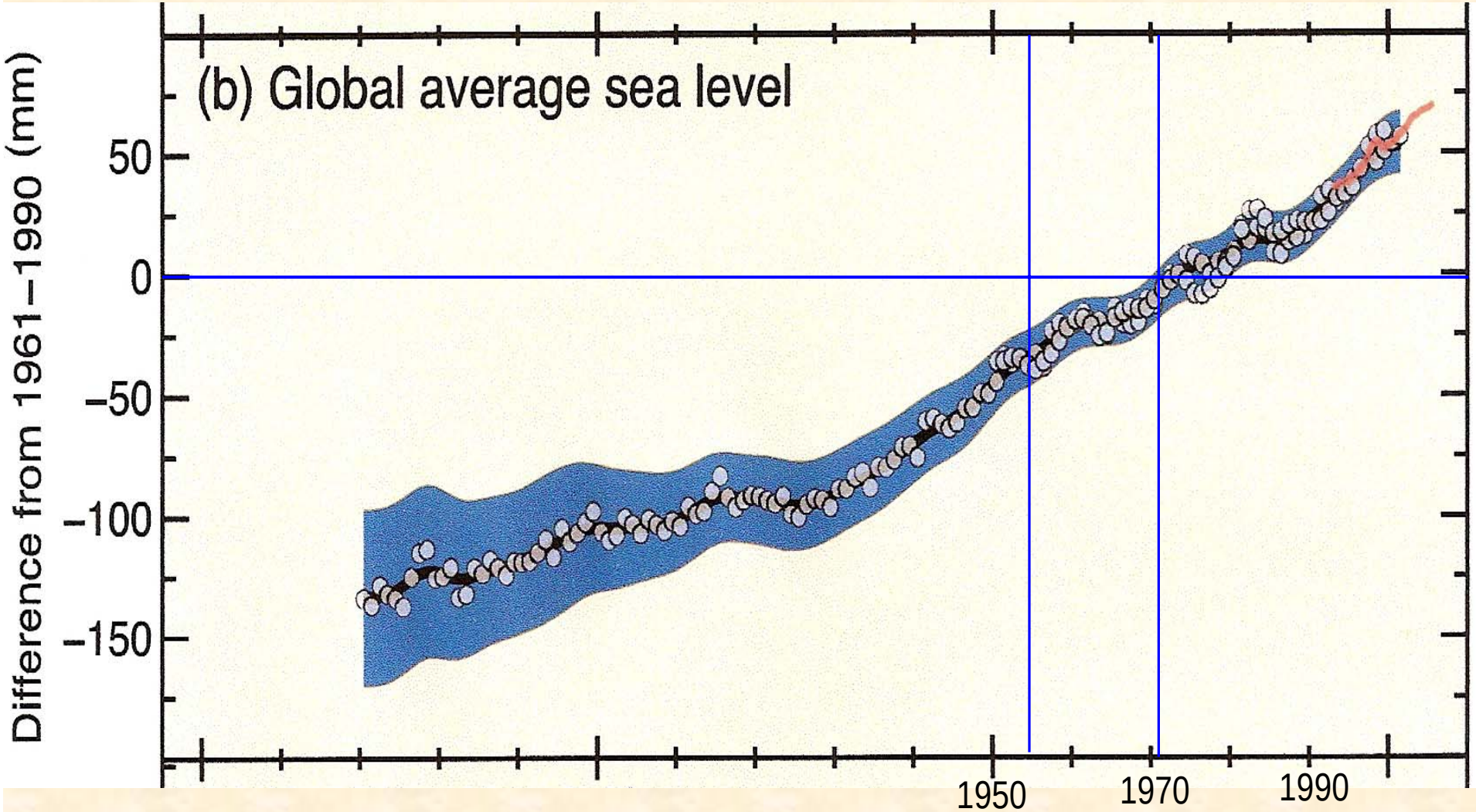
- Some facts about sea-level rise that are of prime concern to developers, the insurance industry, the tourist industry and those who manage the coastal zone

FACT ONE

SEA-LEVEL RISE IS A FACT OF OUR LIVES

AR4 Sea-Level Record to 2007

(Port Royal record between the blue lines)



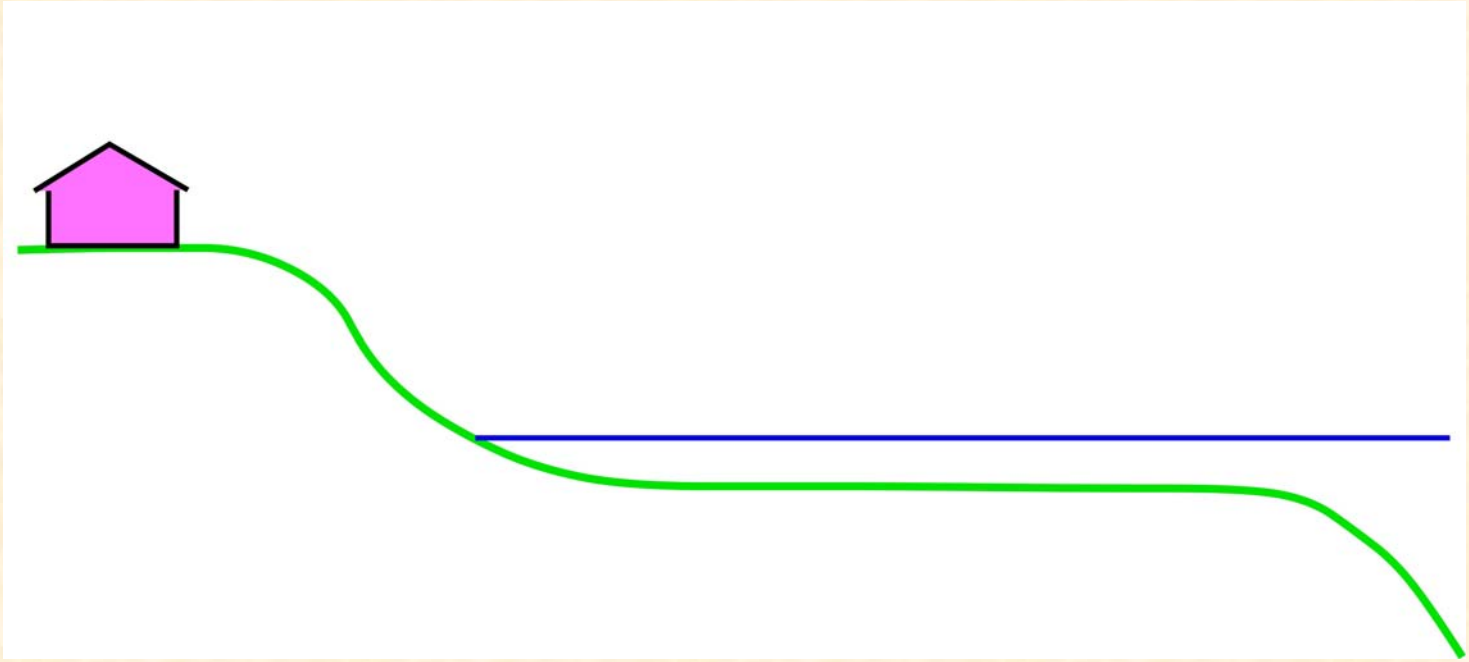
- SEA-LEVEL WILL CONTINUE TO RISE OVER AT LEAST THE NEXT CENTURY EVEN IF CO^2 PRODUCTION CEASED TOMORROW, DUE THE LONG RESPONSE TIME OF THE OCEANS TO CHANGES IN TEMPERATURE

FACT TWO

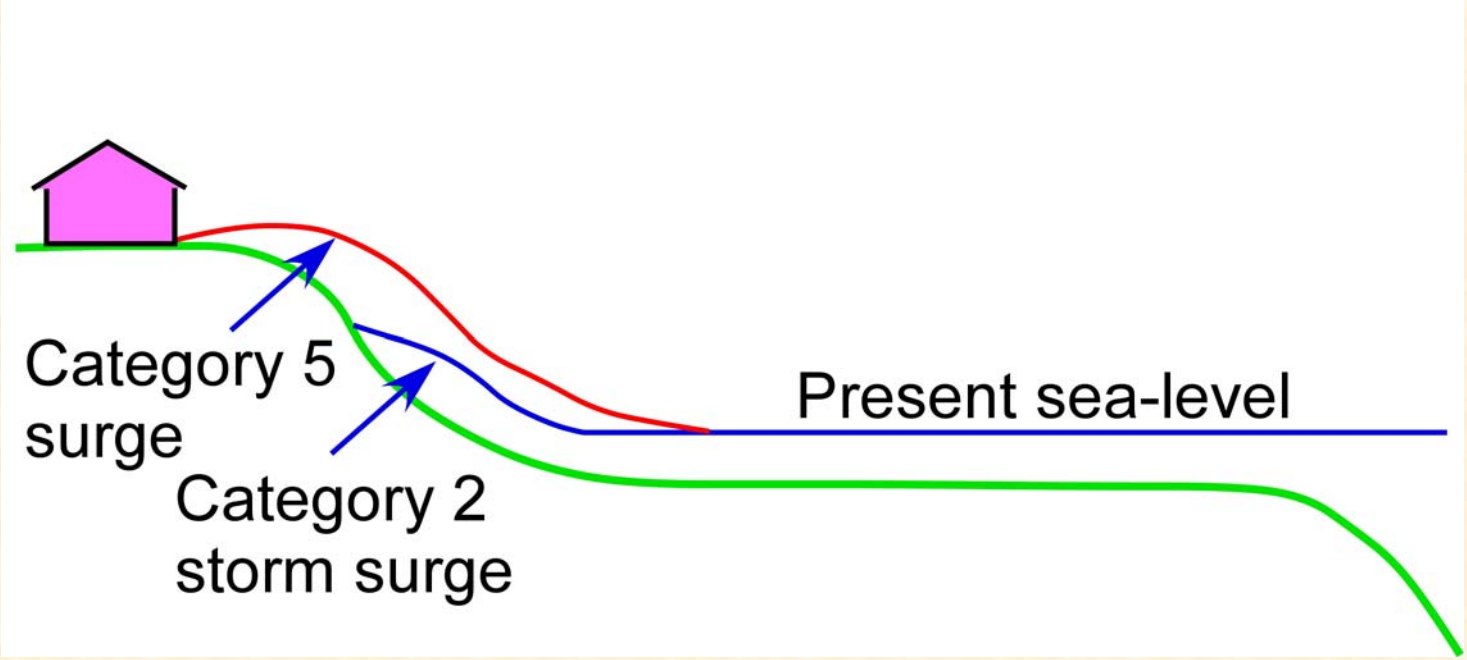
Even if there is no increase in frequency of today's storm systems

Sea-level rise WILL increase the frequency of destructive storms at the coastline

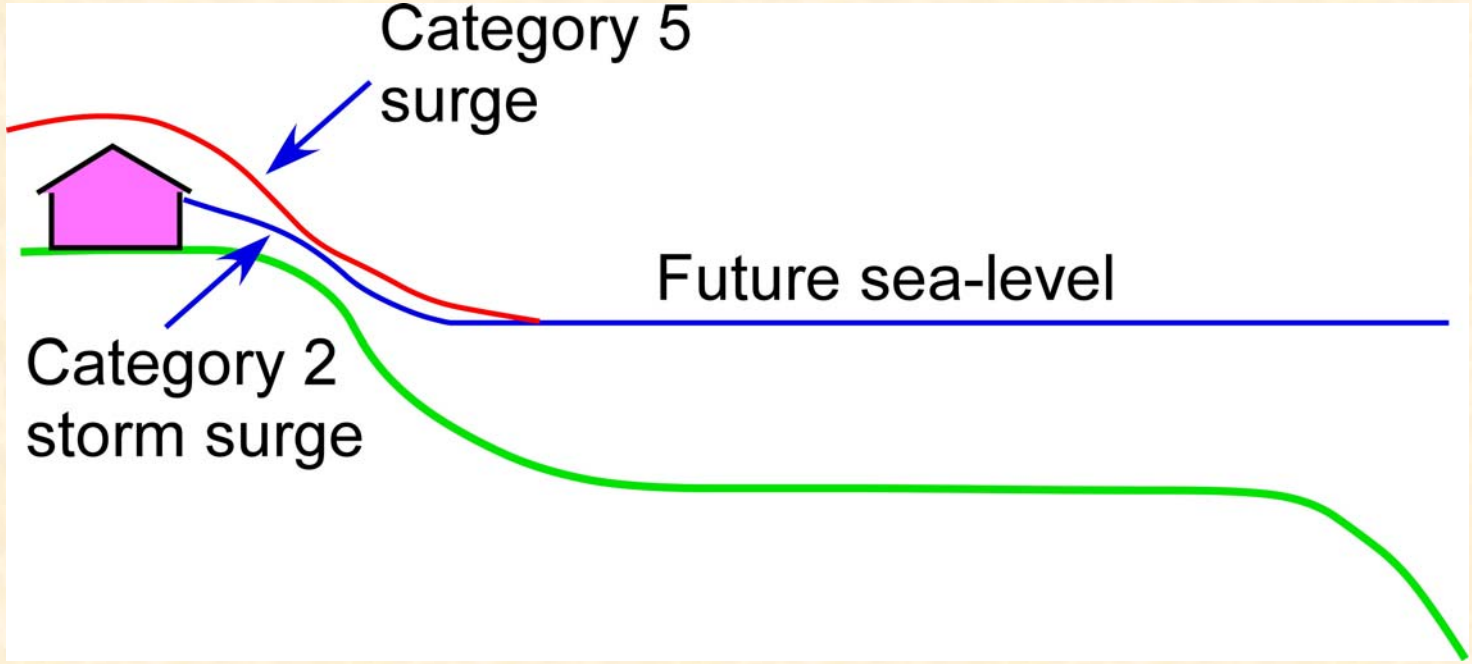
Today



Category 5 hurricane. Return period **100** years
Category 2 hurricane. Return period **4** years.
Damaging impact about every 100 years



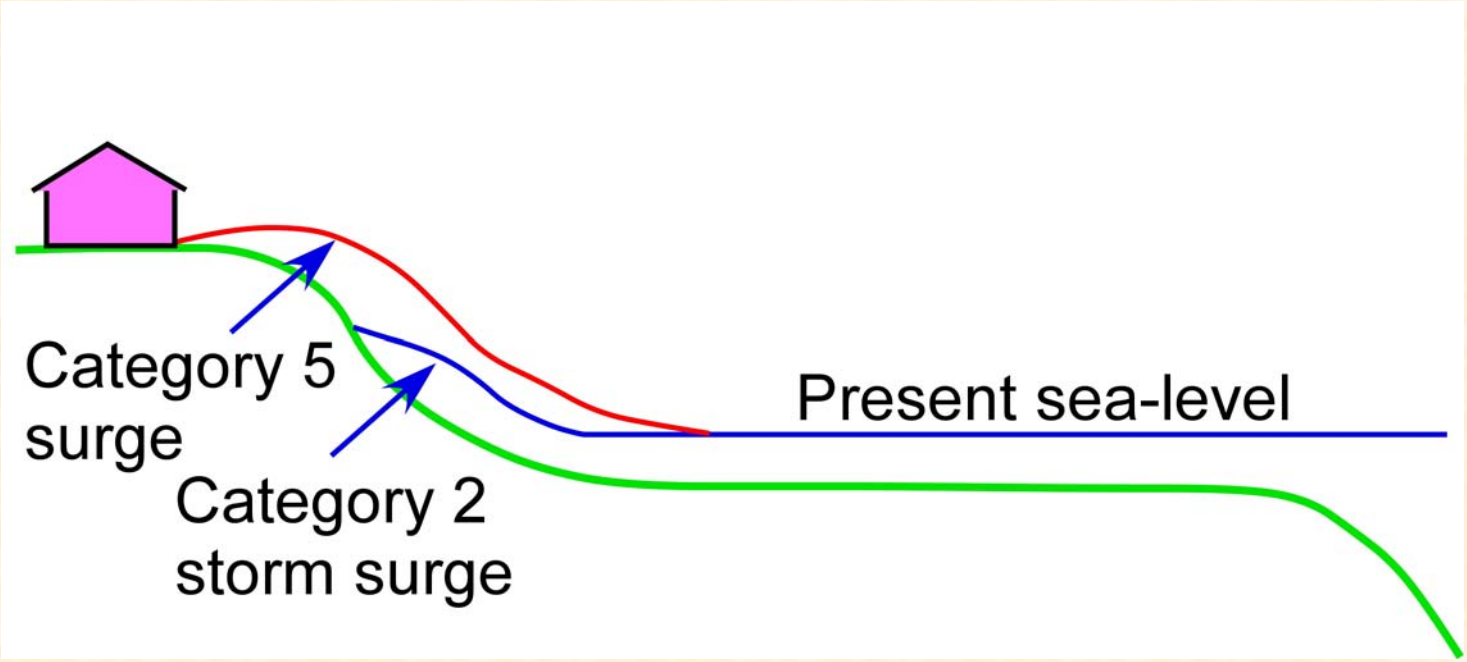
Category 5 hurricane. Return period **100** years
Category 2 hurricane. Return period **4** years.
Damaging impact about every 4 years



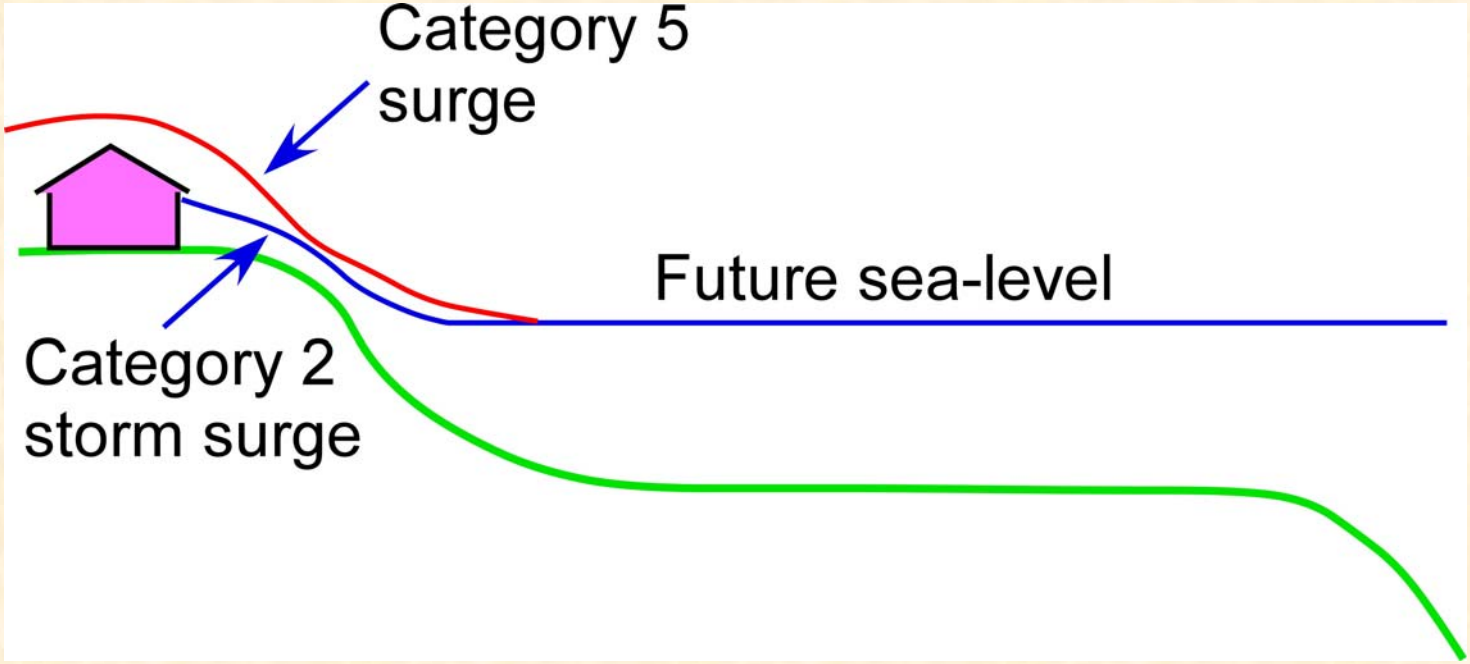
FACT THREE

If the frequency of storms DOES increase, say to twice today's frequency, then the scenario is even worse

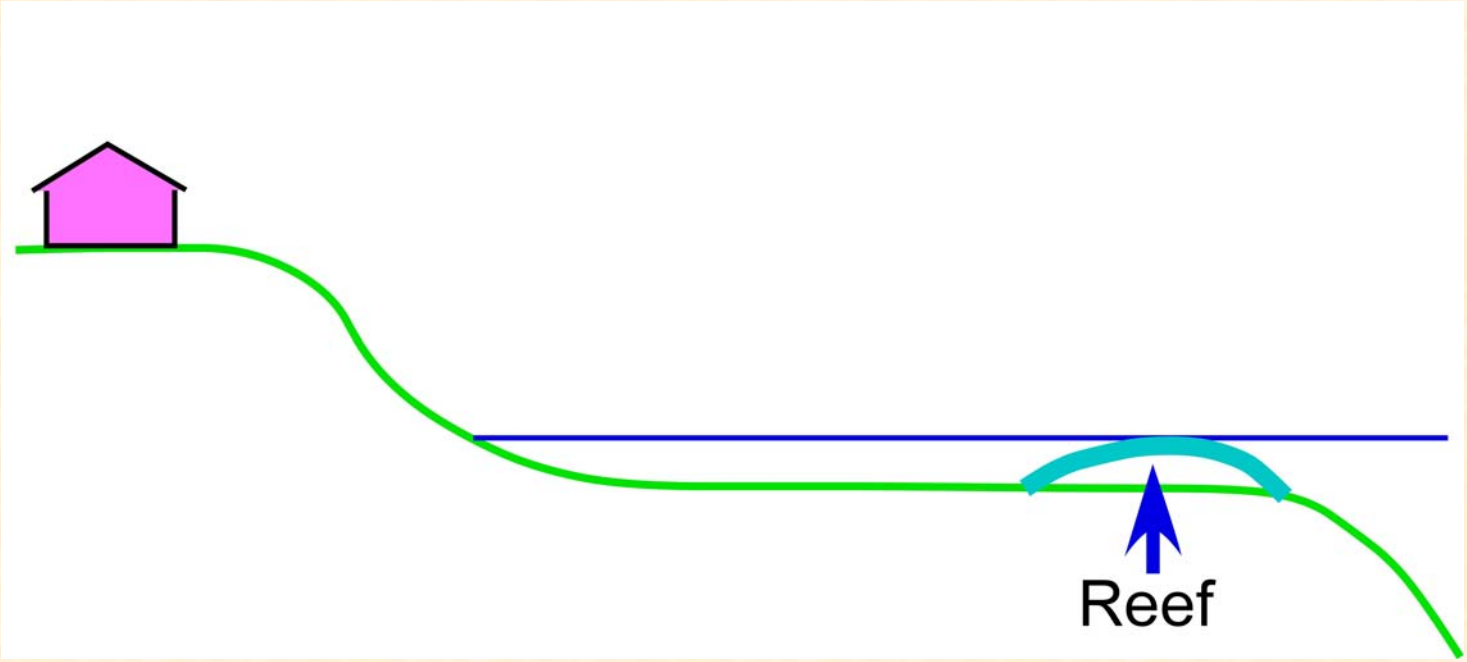
Category 5 hurricane. Return period **50** years
Category 2 hurricane. Return period **2** years.
Damaging impact about every 50 years



Category 5 hurricane. Return period **50** years
Category 2 hurricane. Return period **2** years.
Damaging impact about every 2 years

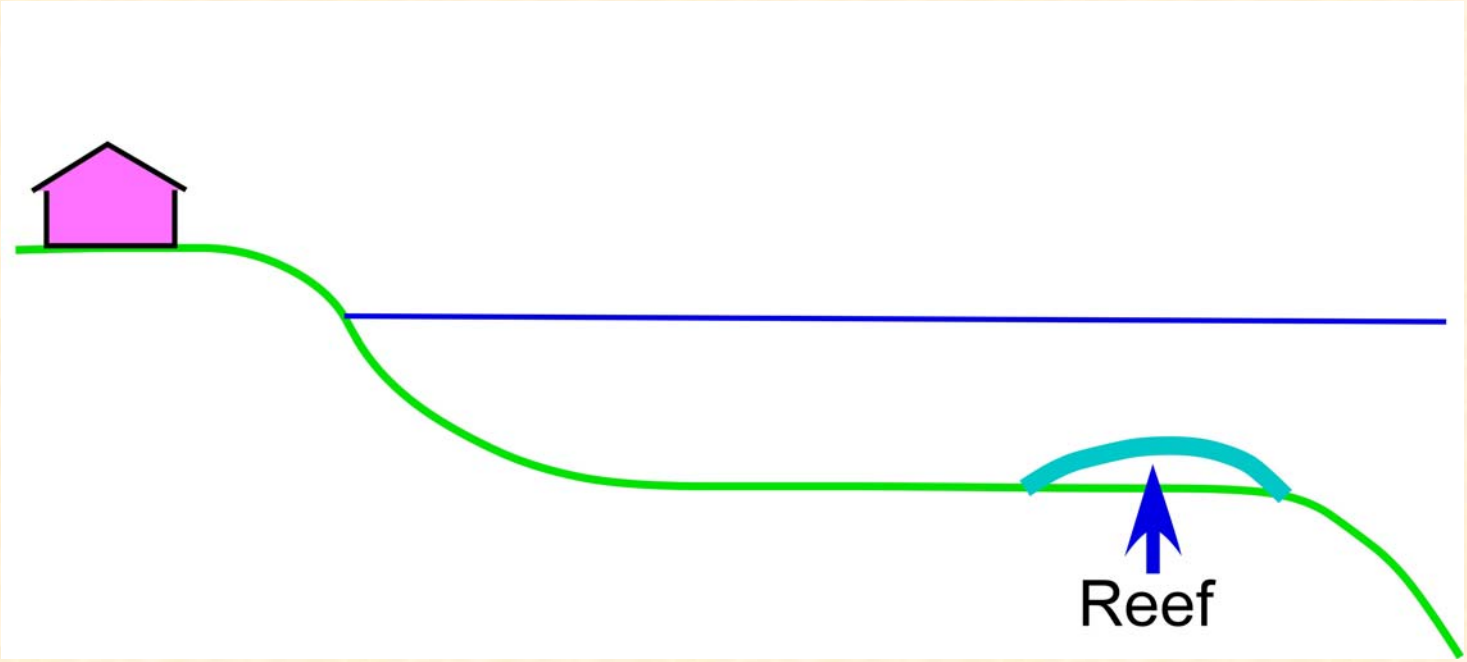


FACT FOUR



Reefs help protect many beach systems on the North Coast and elsewhere.
They absorb much of the energy of incoming waves

If sea-surface temperatures rise and chemical waste from the land pollutes the nearshore ocean, reef growth will not keep up with sea-level rise, and will no longer offer much protection

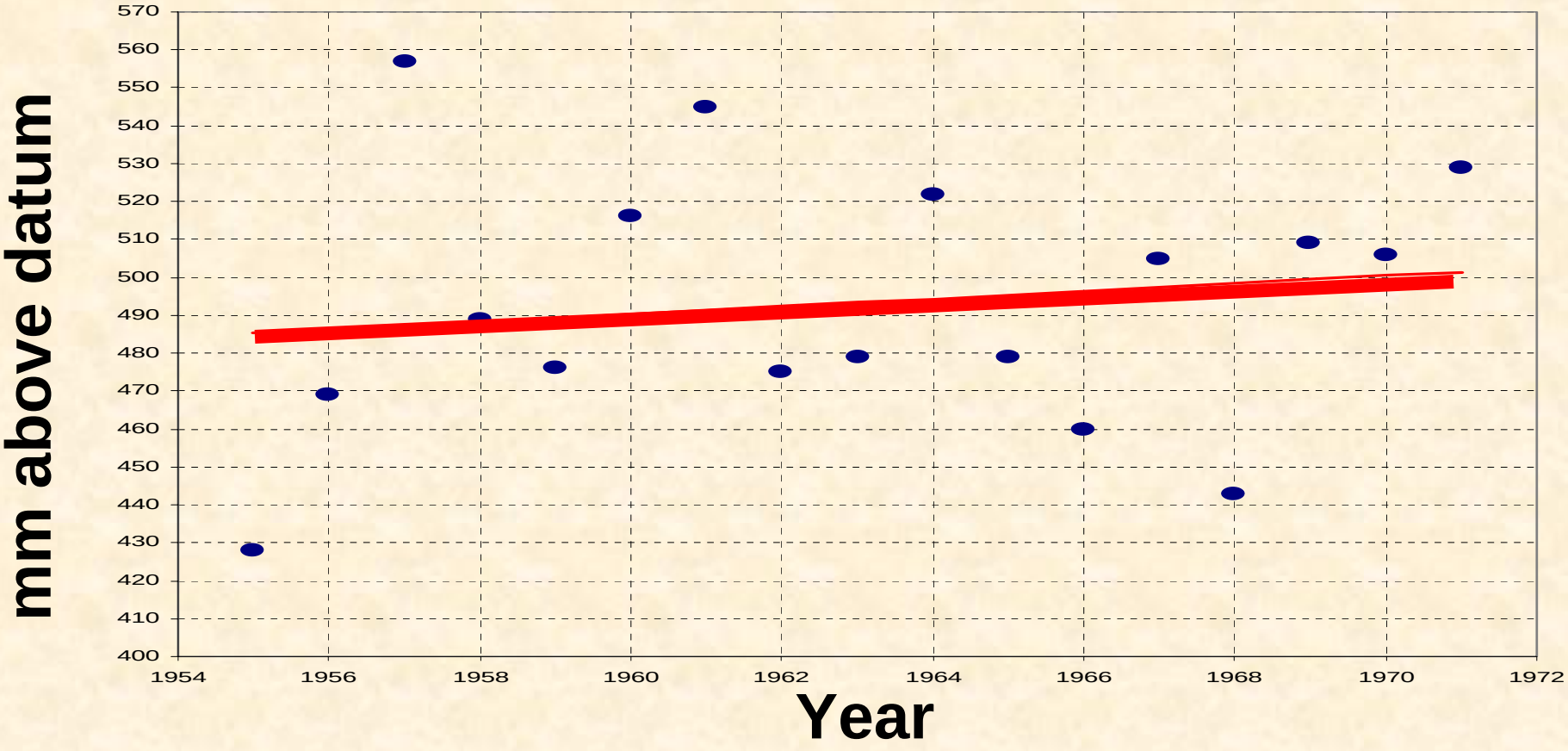


Determination of Sea-Level Rise

- **Sea-Level Rise (SLR) results from global phenomena, not local phenomena**
- **Whatever happens, climate-wise, in Jamaica will have little or no bearing on the extent of future SLR here**
- **Therefore SLR determinations for Jamaica rely on global models**
- **Although there are considerable regional fluctuations in sea-level change rates, analysis of past SLR suggests that future sea-level change rates in the Caribbean will approximate the global mean rate (AR4 2007)**

Mean Annual Sea-Levels at Port Royal 1955 – 1971

(redrawn from Cambray 1973, linear trend inserted)



Largest mean year-to-year fluctuation is 88 mm, the smallest is 3 mm

Mean rise from trend line, 1955-1971, is 15 mm

SUMMARIZING POSSIBLE SLR

Projections in red are being used in our analysis

Years	2015	**2030**	2050
Approximate means			
TAR	2 cm	**7 cm**	16 cm
AR4	2 cm	**6 cm**	16 cm
Rahmstorf	3 cm	**11 cm**	25 cm
Approximate High Limits			
TAR	4 cm	**7 cm**	15 cm
AR4	4 cm	**6 cm**	16 cm
Rahmstorf	5 cm	**16 cm**	6 cm


IS THIS HOUSE A PRIME TARGET FOR DESTRUCTION
IN THE NEXT SEVERE HURRICANE?