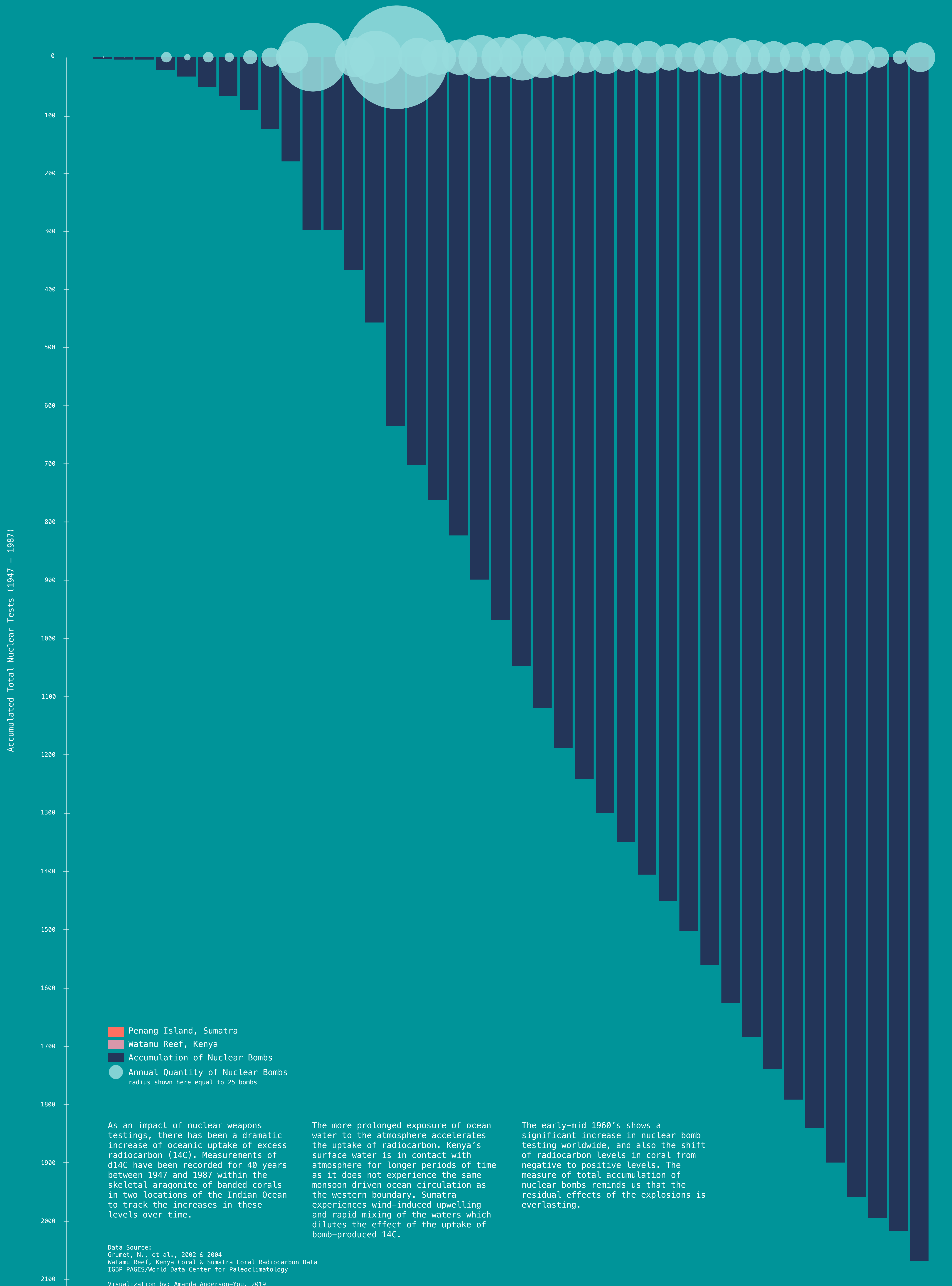
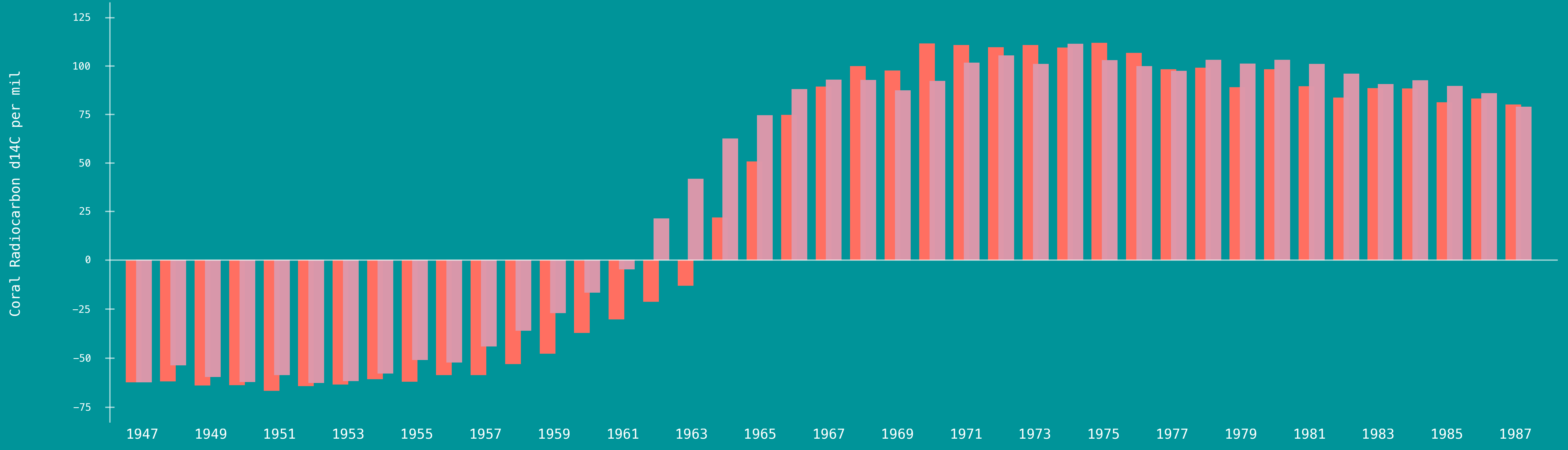


# CORAL AND THE BOMB



- Penang Island, Sumatra
- Watamu Reef, Kenya
- Accumulation of Nuclear Bombs
- Annual Quantity of Nuclear Bombs  
radius shown here equal to 25 bombs

As an impact of nuclear weapons testings, there has been a dramatic increase of oceanic uptake of excess radiocarbon ( $^{14}\text{C}$ ). Measurements of  $^{14}\text{C}$  have been recorded for 40 years between 1947 and 1987 within the skeletal aragonite of banded corals in two locations of the Indian Ocean to track the increases in these levels over time.

The more prolonged exposure of ocean water to the atmosphere accelerates the uptake of radiocarbon. Kenya's surface water is in contact with atmosphere for longer periods of time as it does not experience the same monsoon driven ocean circulation as the western boundary. Sumatra experiences wind-induced upwelling and rapid mixing of the waters which dilutes the effect of the uptake of bomb-produced  $^{14}\text{C}$ .

The early-mid 1960's shows a significant increase in nuclear bomb testing worldwide, and also the shift of radiocarbon levels in coral from negative to positive levels. The measure of total accumulation of nuclear bombs reminds us that the residual effects of the explosions is everlasting.

Data Source:  
 Grunet, N., et al., 2002 & 2004  
 Watamu Reef, Kenya Coral & Sumatra Coral Radiocarbon Data  
 IGBP PAGES/World Data Center for Paleoclimatology

Visualization by: Amanda Anderson-You, 2019