Australian Government

Ansto

How resilient are our shores?

Applications of nuclear techniques to the study of storm surges, tsunamis and sea-level rise

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2011 Tohoku-oki tsunami inundating the Sendai plain

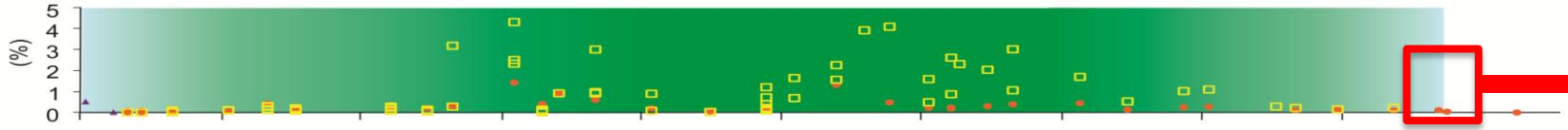
(near Sendai airport)

Source: wordpress.api.com

Chemical fingerprinting

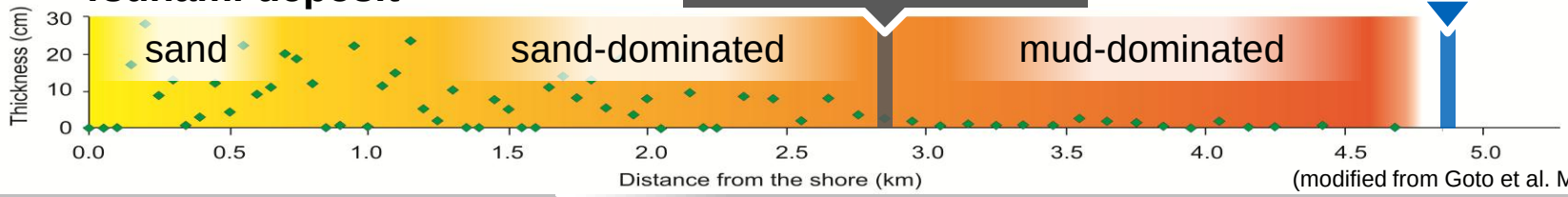
Sea

Chlorine (= salt)



(Chagué-Goff et al. Sed Geo 2012)

Tsunami deposit



(modified from Goto et al. Mar Geo 2011)

Extent of sand	**Magnitude of tsunamis and earthquakes under-estimated**
Chemical fingerprinting	**Identify true extent of tsunami inundation, redraw (palaeo) tsunami inundation maps**

How big? How often?

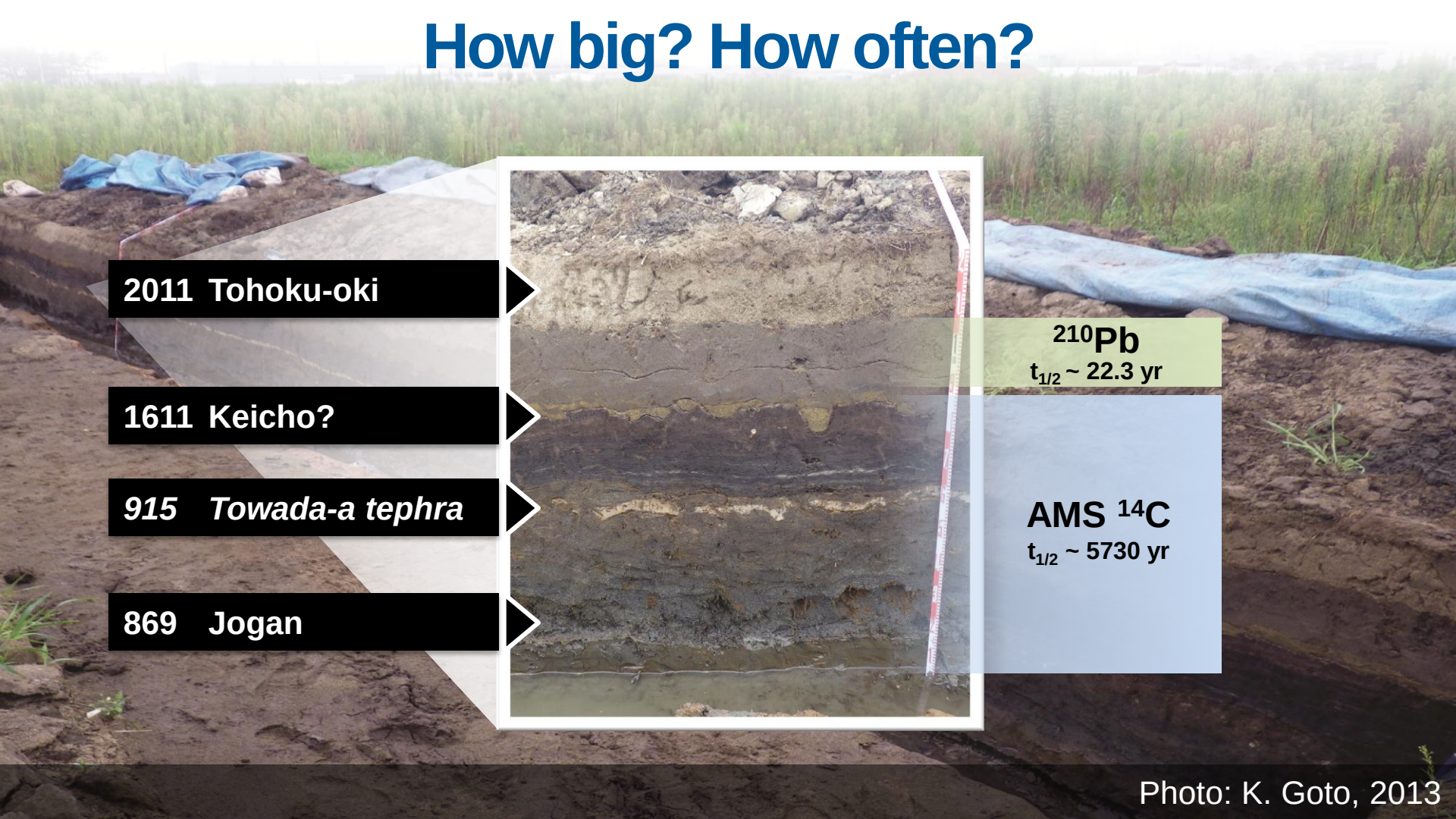


Photo: K. Goto, 2013

Tropical Cyclone Yasi, Category 5

2 February 2011 – Australian Government – Bureau of Meteorology

Tropical Cyclone Yasi- 2011

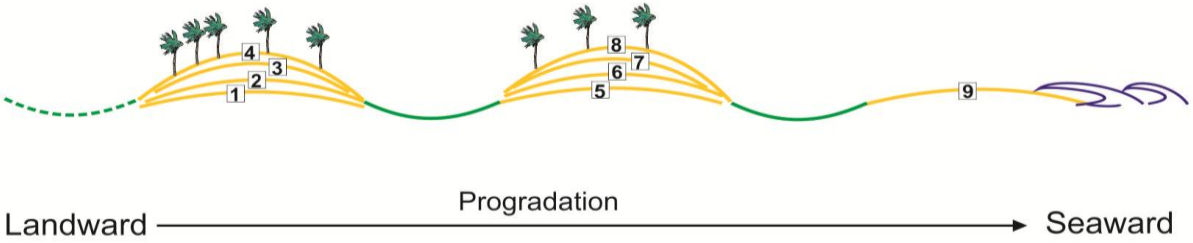
How big? How often?

Tropical Cyclone Yasi, 2011

Tropical Cyclone Larry, 2006

Tropical Cyclone Winifred, 1986

Innisfail Tropical Cyclone, 1918



(from Nott et al. JGR 2013)

Thank you