


Climate Change and Marine Biodiversity



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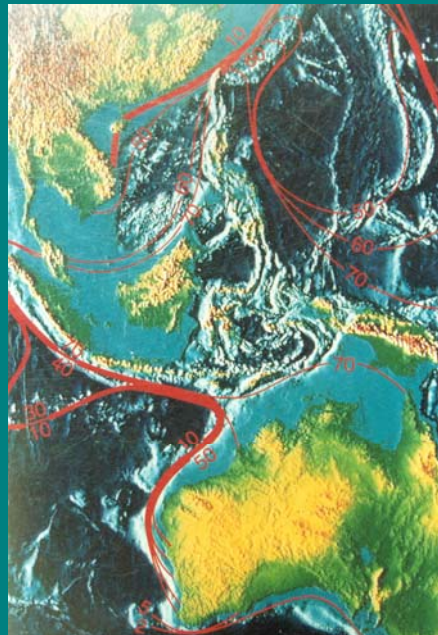


THE SURROUNDING SEAS



THE CORAL TRIANGLE

Red lines connect areas with equal number of coral genus



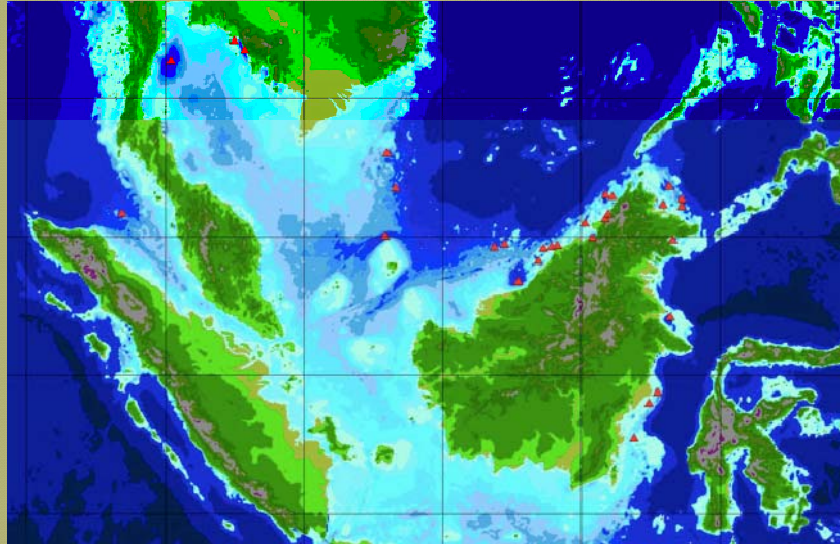
The three significant effects of climate change on the oceans

- 1.The rise in sea level
- 2.Increase in sea surface temperature
- 3.Ocean acidification

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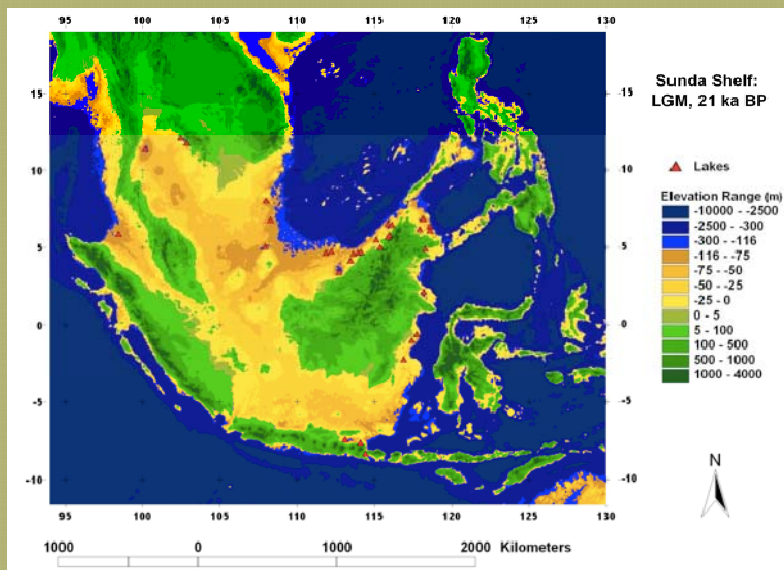
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Present day sea level



(Adapted from Voris, 2006)

Sea level 21,000 years ago

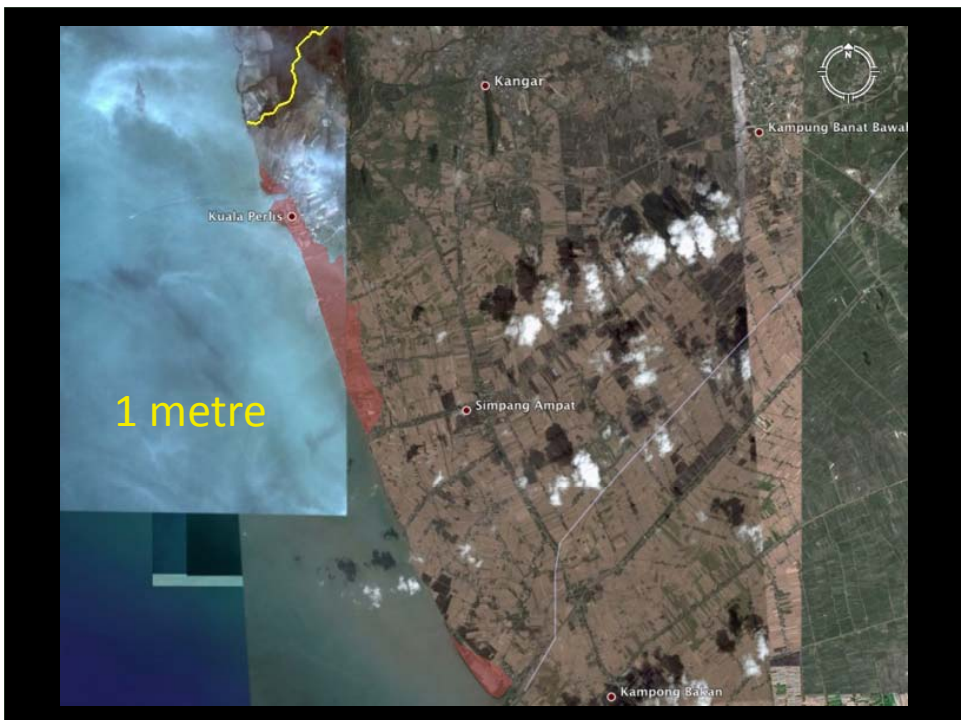
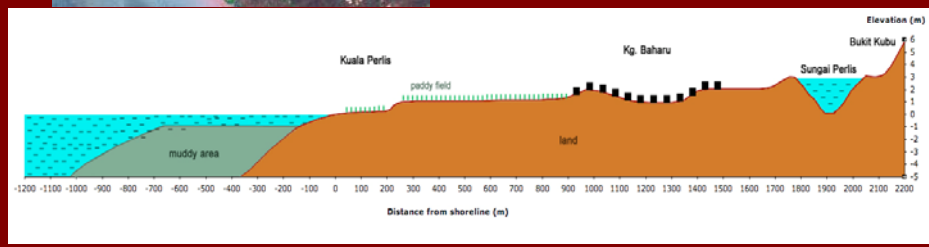


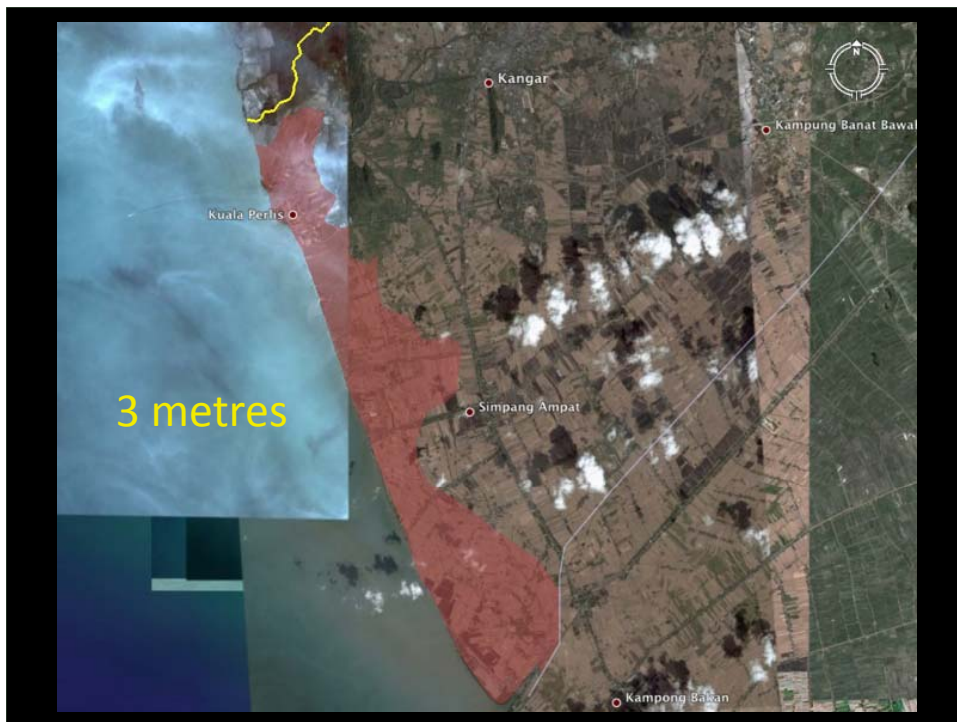
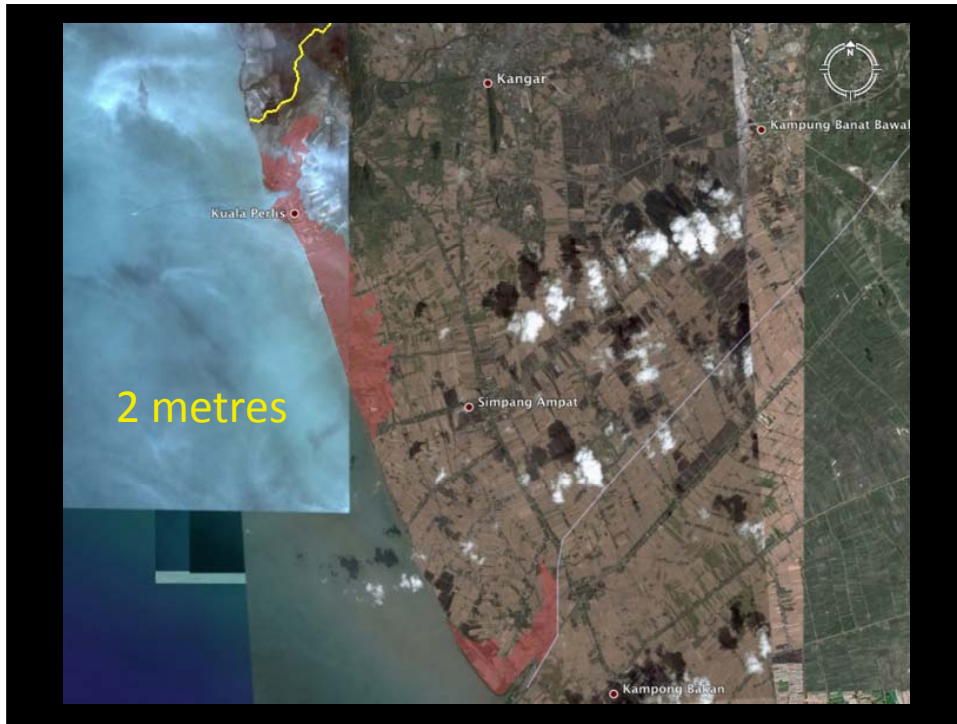
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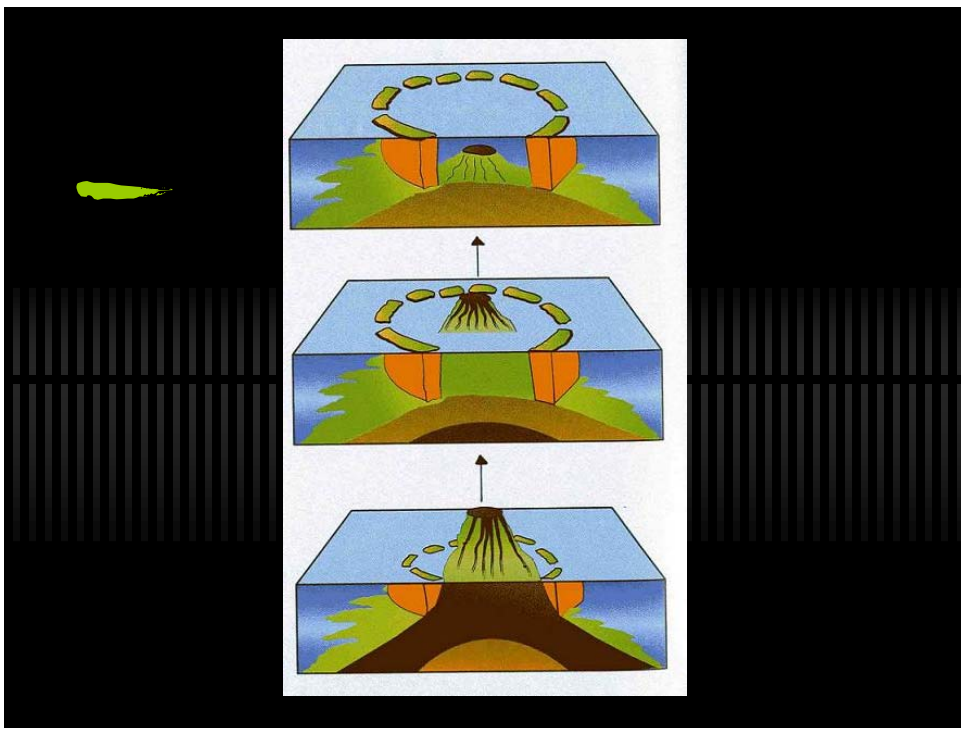
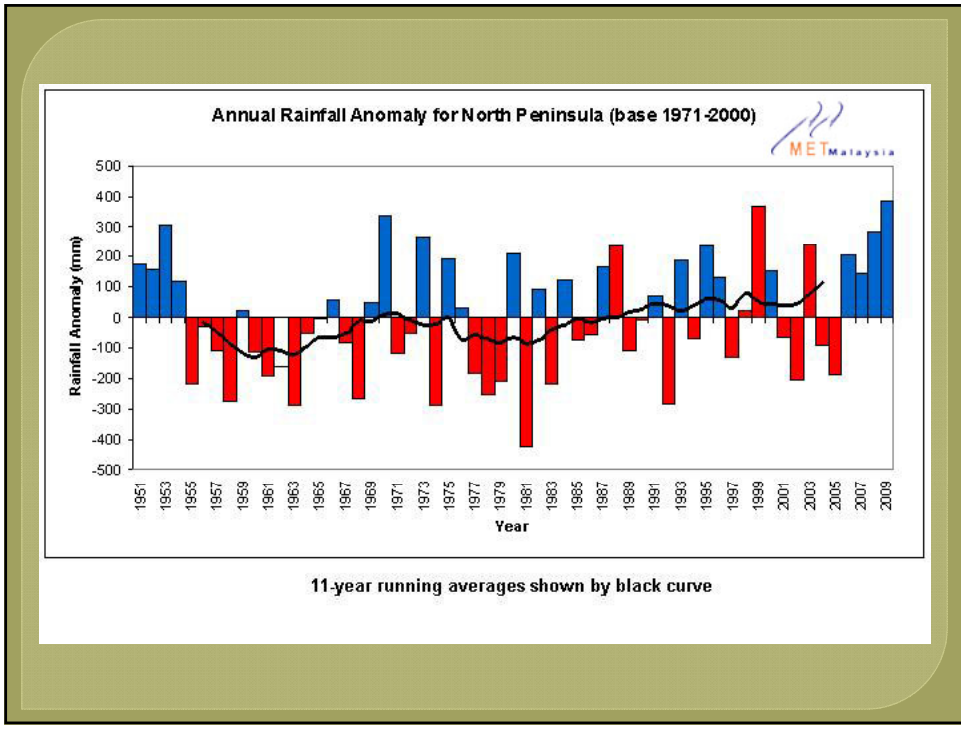
Elevation of the Perlis coastline



Location of cross section

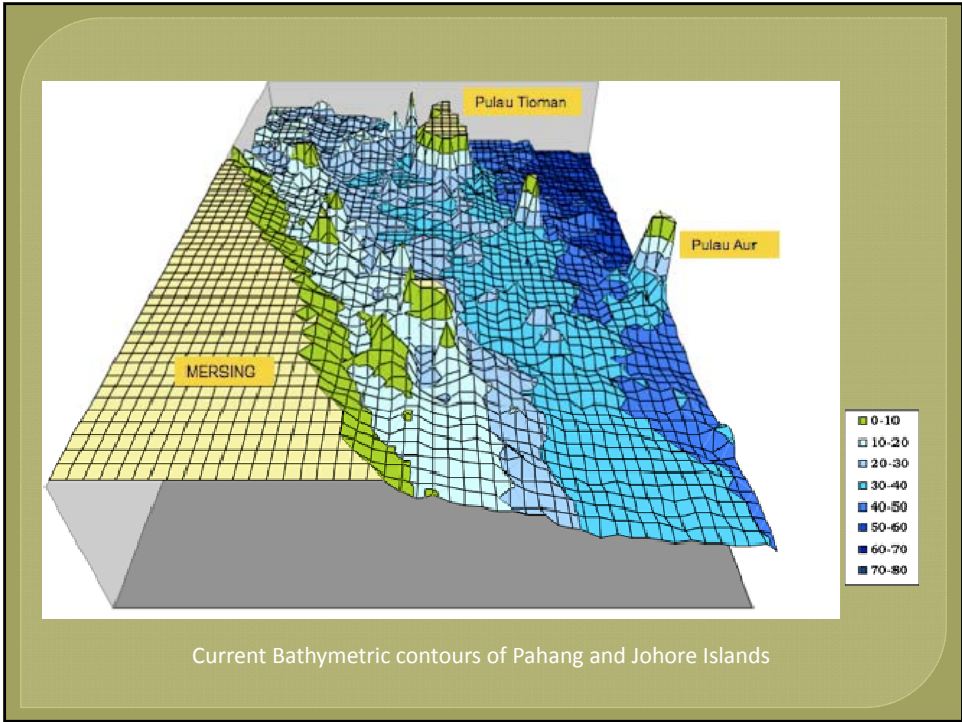








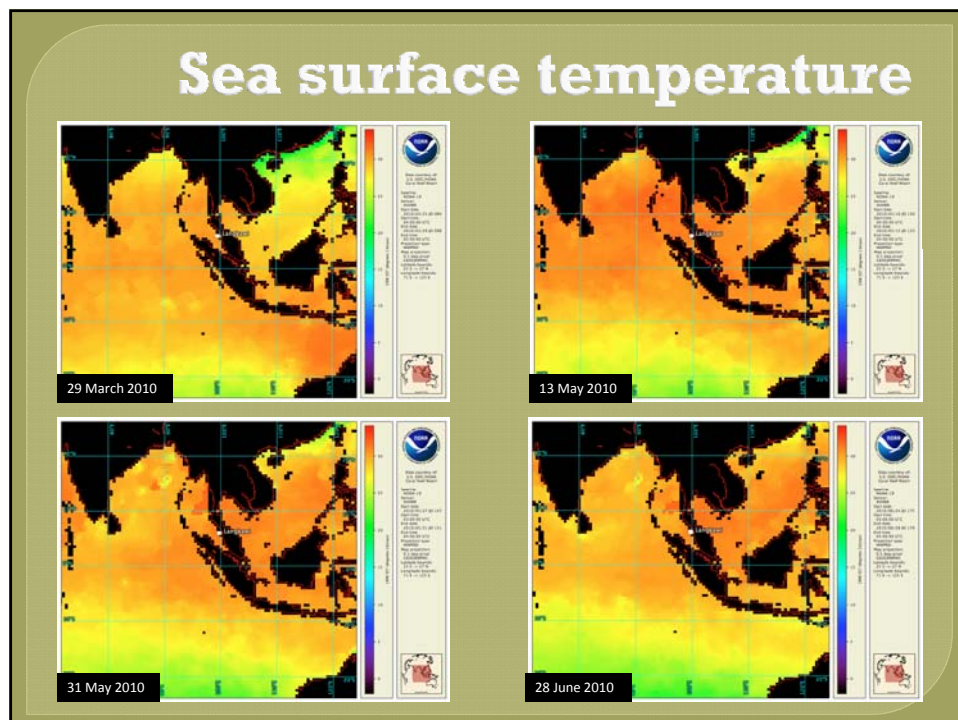
The Pahang and Johore Islands

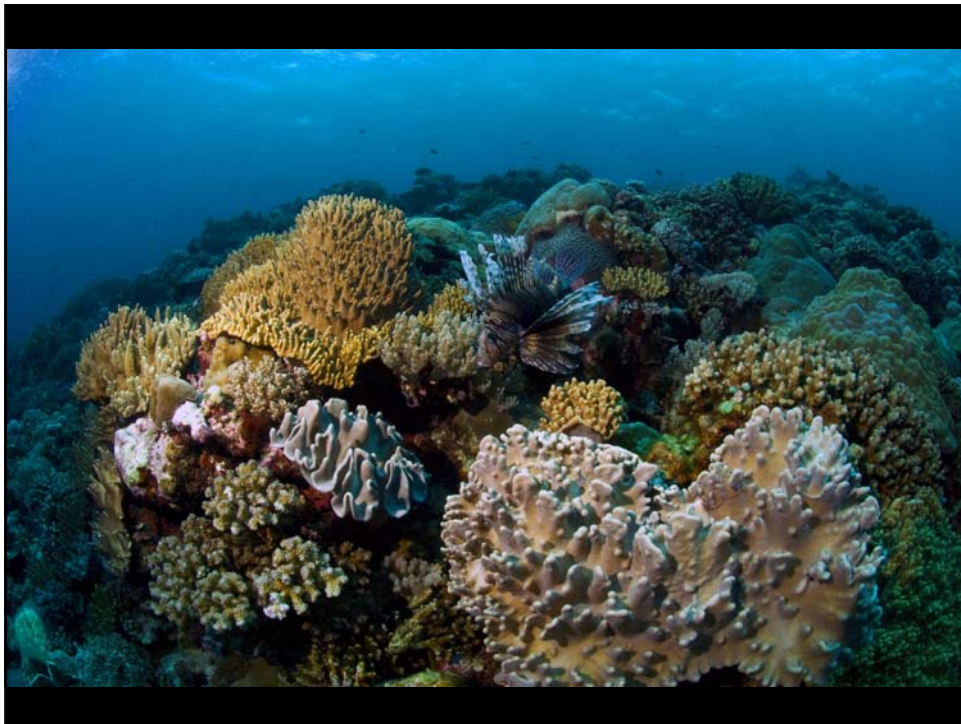


Current Bathymetric contours of Pahang and Johore Islands

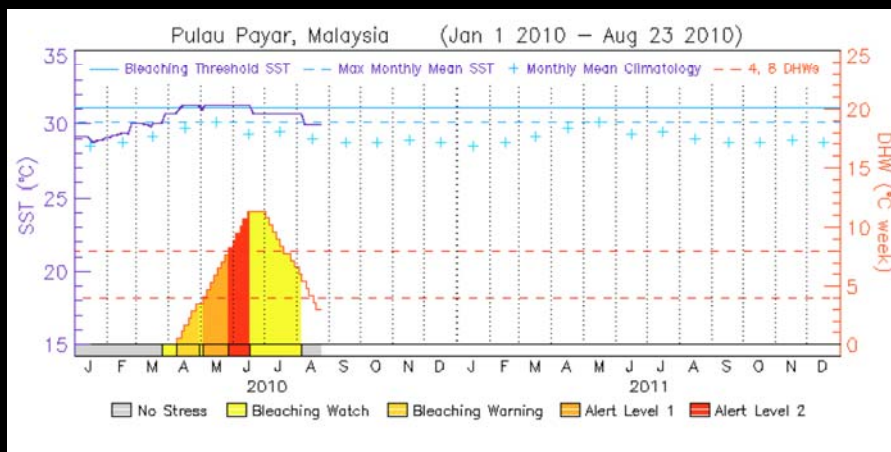
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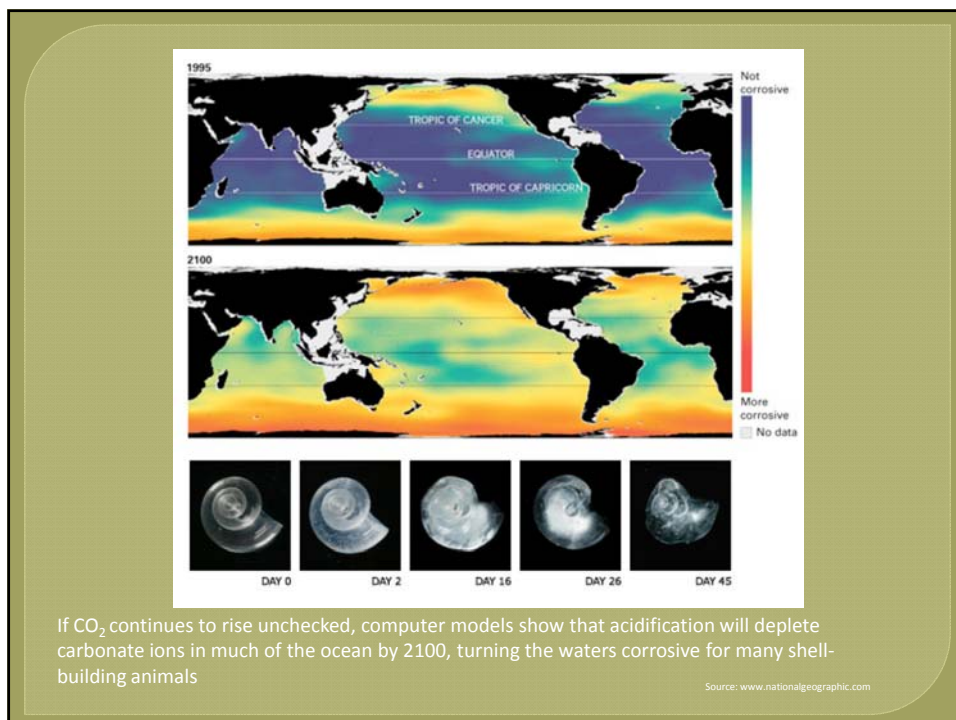
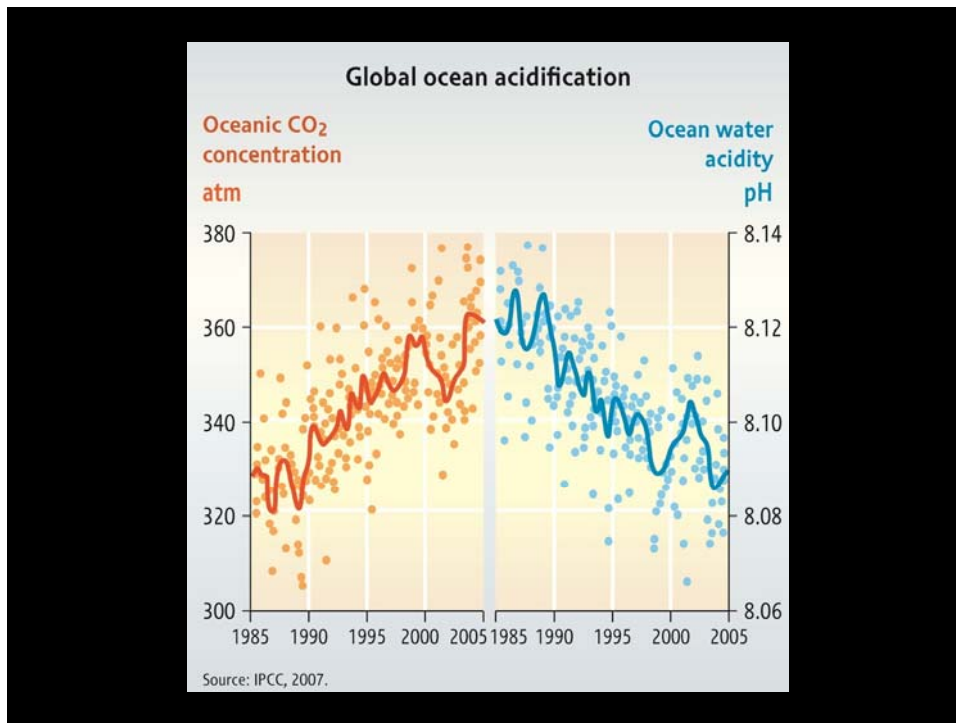
Coral Bleaching Event





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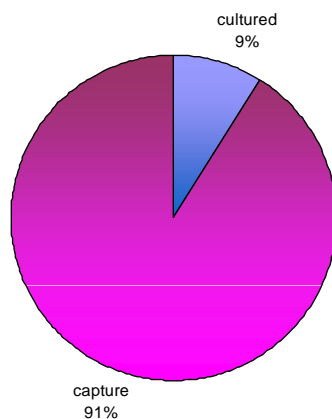
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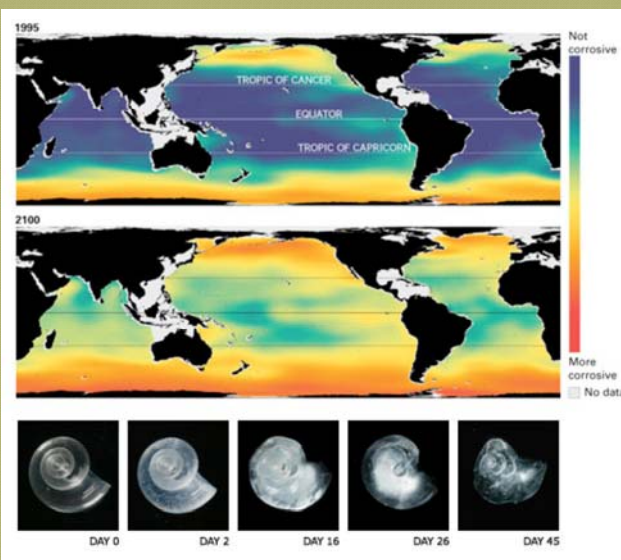
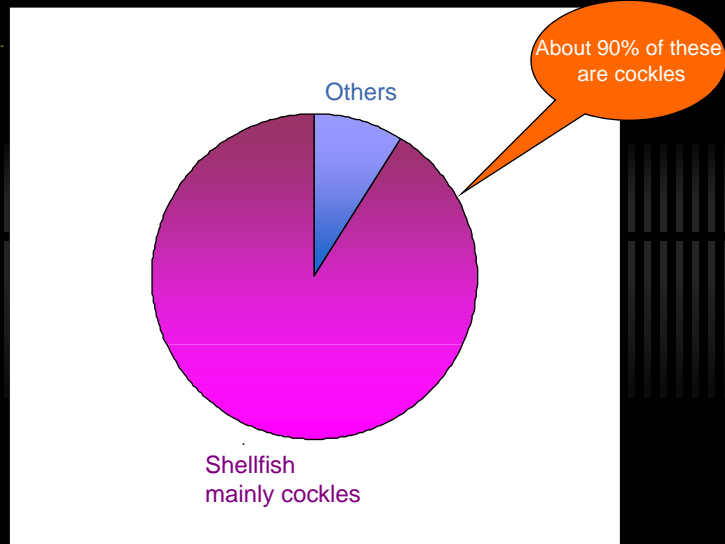
If CO₂ continues to rise unchecked, computer models show that acidification will deplete carbonate ions in much of the ocean by 2100, turning the waters corrosive for many shell-building animals



Total Marine Fish Landings from the Straits of Malacca in 2006 (by tonnage)



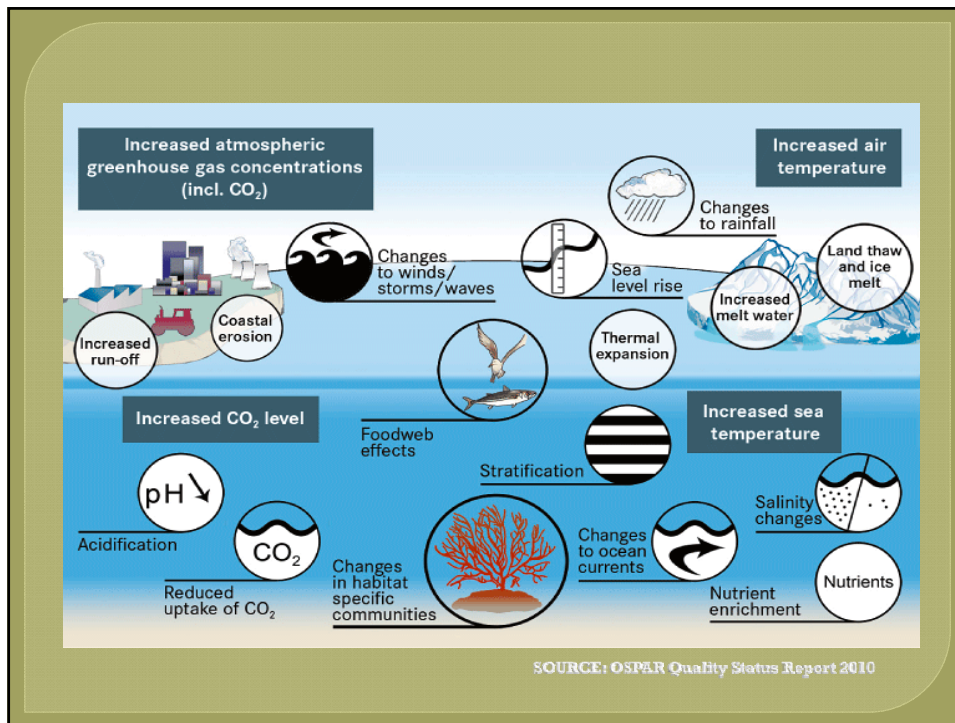
Malaysia's culture fisheries (by percentage tonnage)



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Source: www.nationalgeographic.com





Biological community interactions are complicated



The smallest sea cucumber

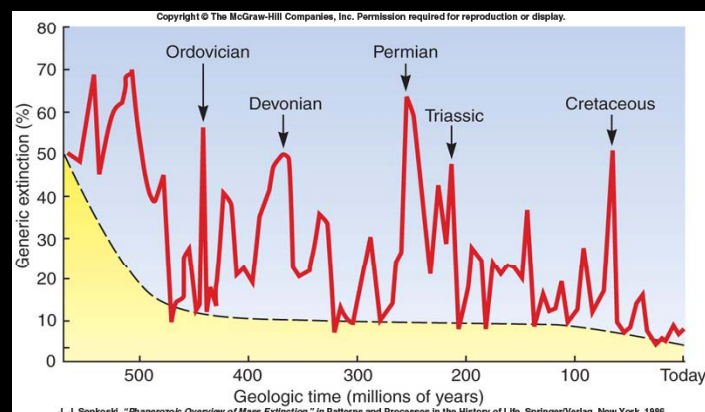
How many species
will survive the current
changes in climate?

...or will our species survive

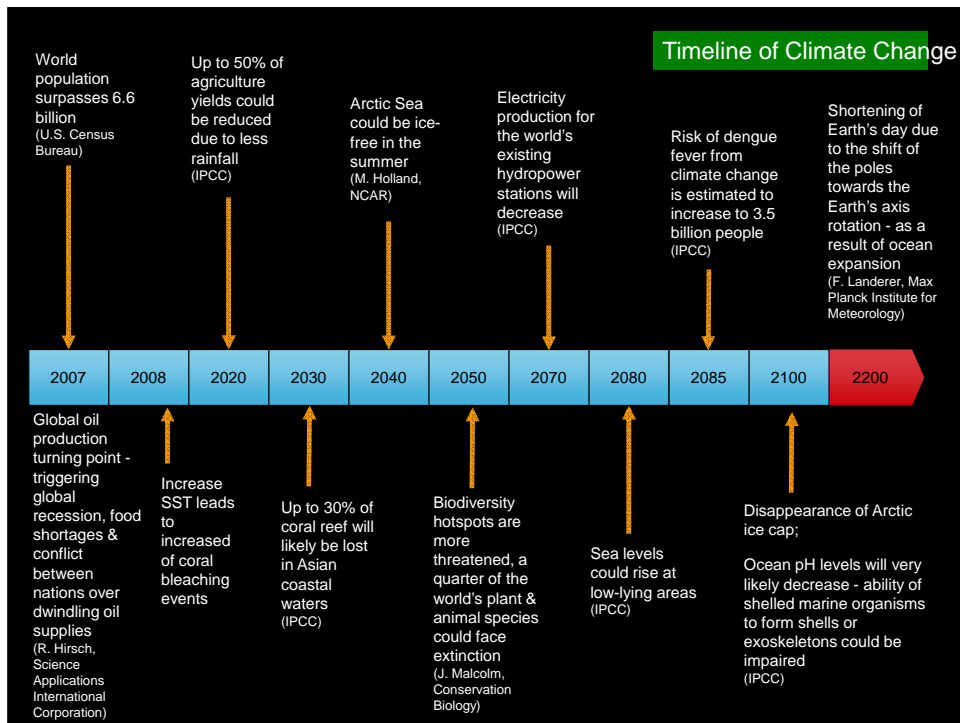
?

MASS EXTINCTIONS: PHANEROZOIC EXTINCTION PATTERNS

Marine invertebrates and protozoans versus time.



* Excursion correlate with divisions in geological time scale.



-GAPS-

- we really need to inventorize what diversity we have
- we really need to prioritize critical marine habitats to be studied
- for biodiversity research there is an urgent need to set up a comprehensive reference collection muzeum for the country

— ...there is an urgency
in the preparation for
global warming



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