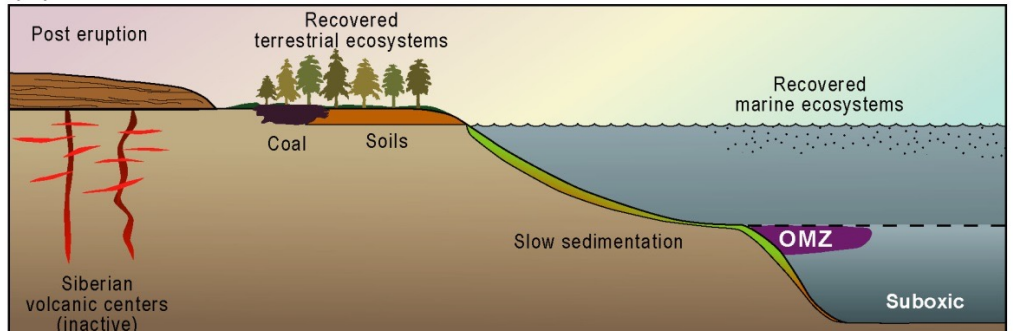


# Evolution of Life Through Time

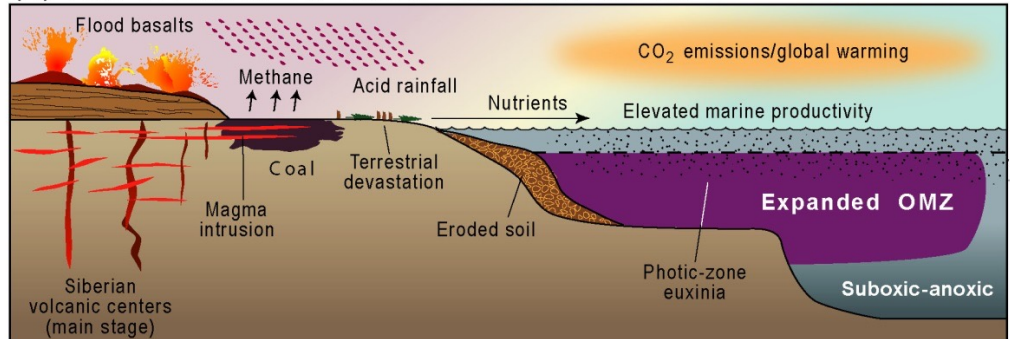
Subhronil Mondal

# MESOZOIC: THE LOWER BOUNDARY

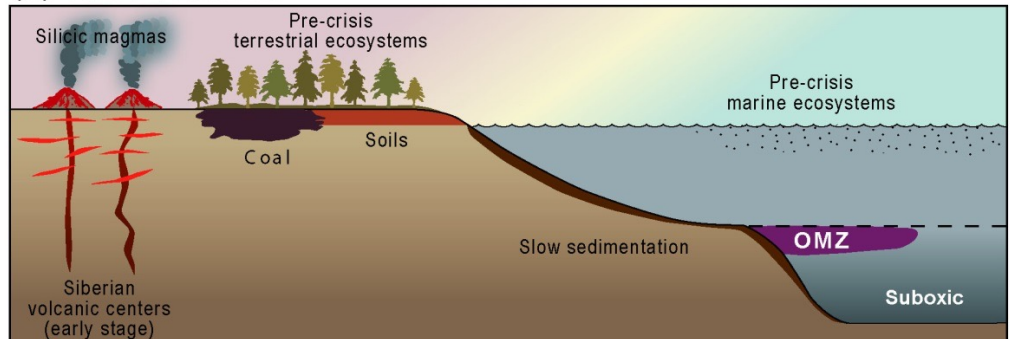
(C) MIDDLE TRIASSIC



(B) END-PERMIAN TO EARLY TRIASSIC CRISIS



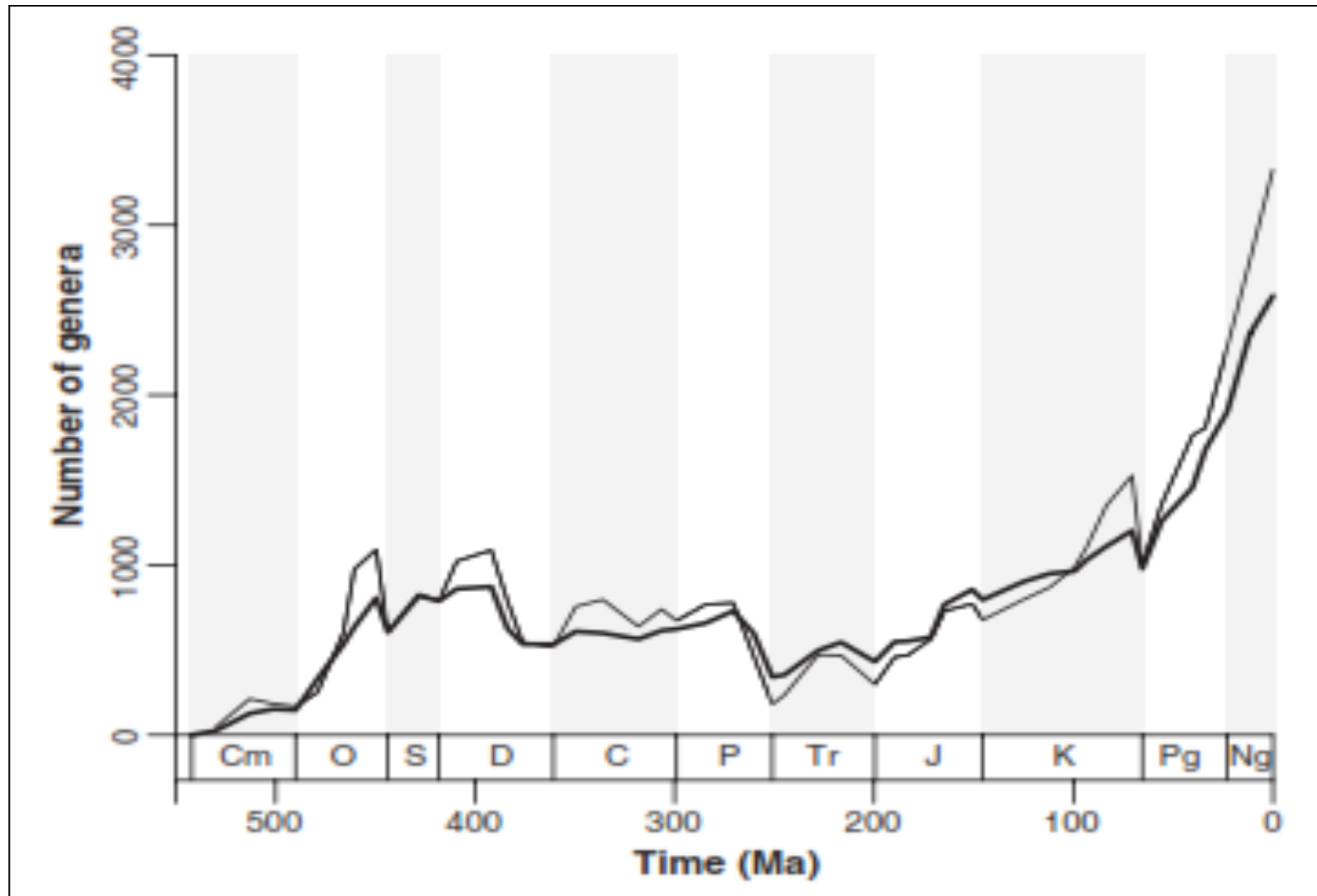
(A) LATE PERMIAN



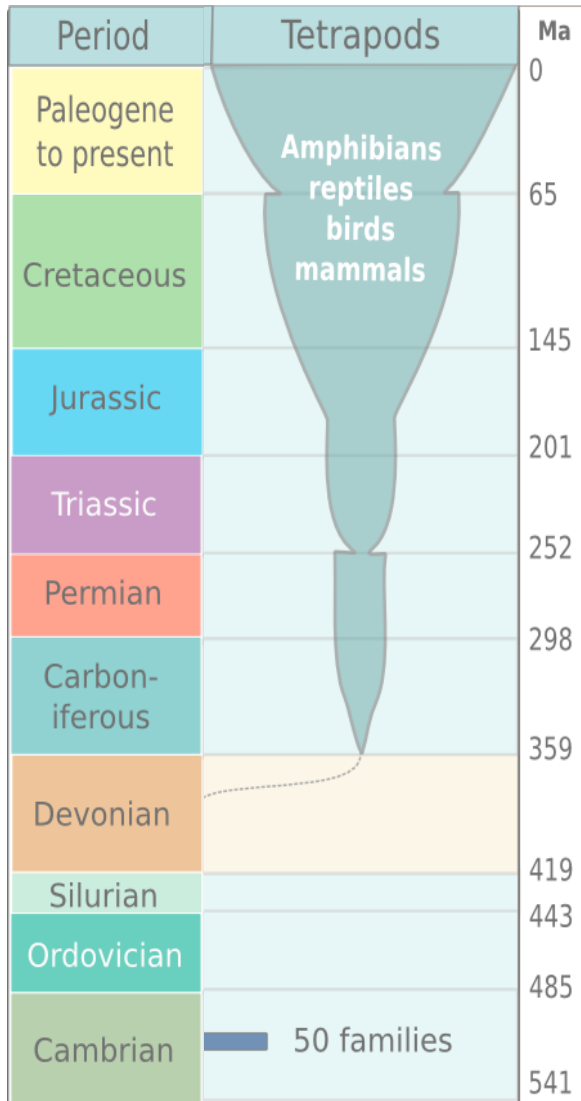
Model of the PTME, with all environmental Causes together

# PHANEROZOIC MARINE BIODIVERSITY

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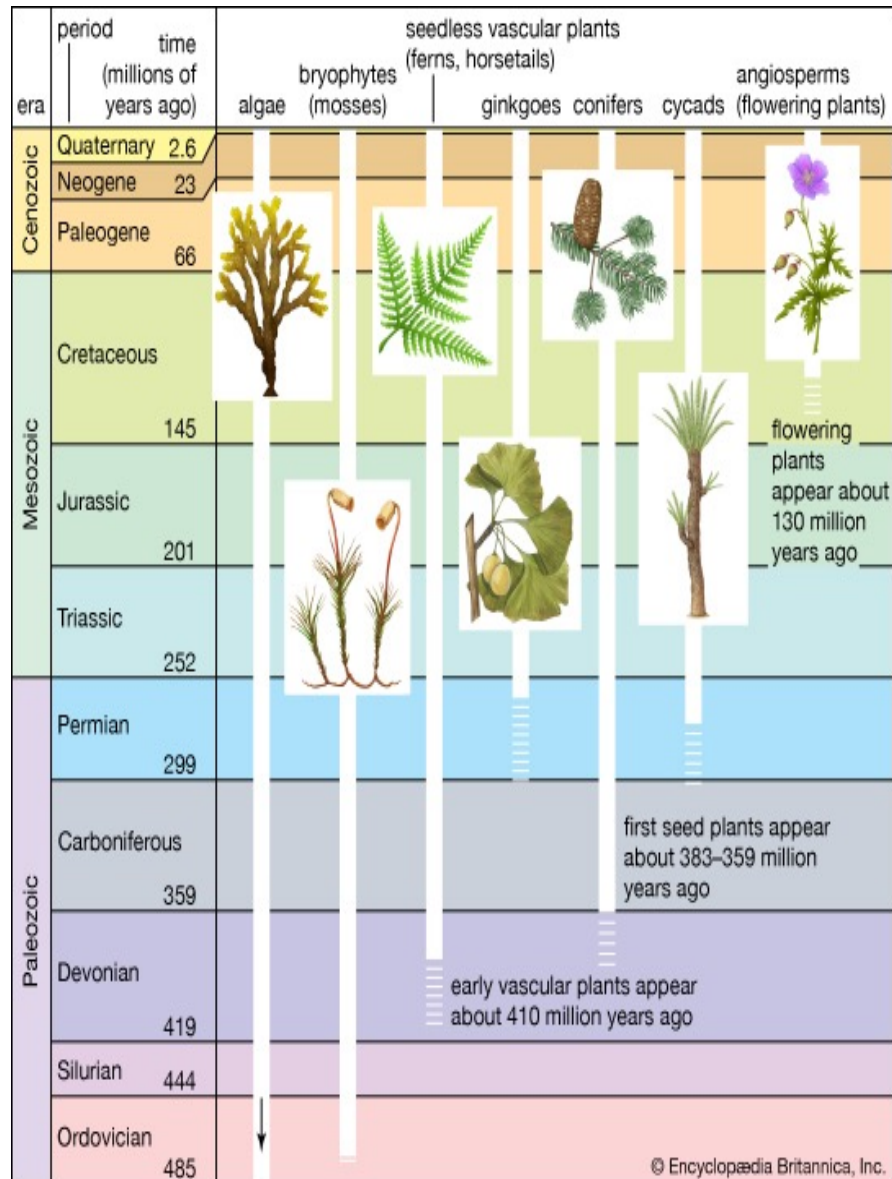
# MESOZOIC: BIOTIC HISTORY

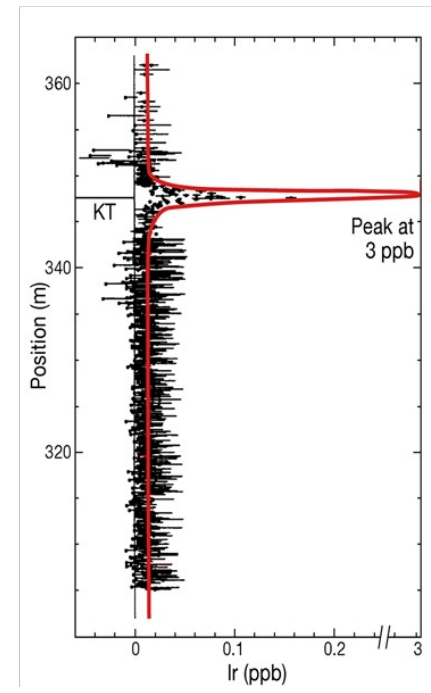


Wikimedia Commons

Ichthyosaurs

# MESOZOIC: BIOTIC HISTORY







# KEY EVENTS

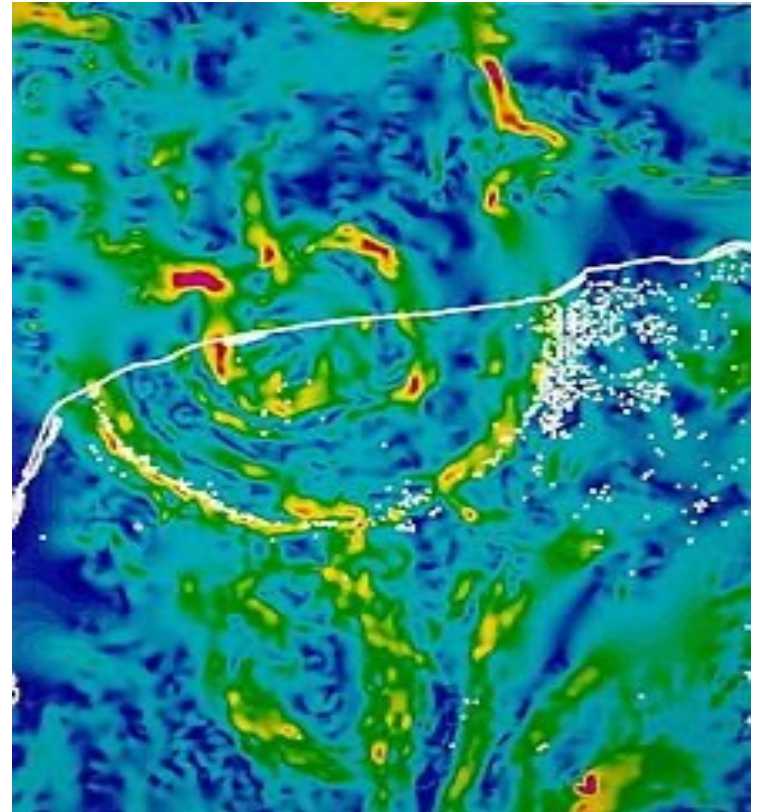
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## Chicxulub Crater

- ~66 Ma [K/Pg Boundary]
- $2r = 150$  km
- Mass Extinction

Wiki image



Gravity anomaly map [white line: coast line]

**ANTHROPOCENE EXTINCTION?**



# DATA

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- ❑ 90% of all large fish have disappeared in the last 50 years due to over-fishing.
- ❑ 30% of North American songbird species are in significant decline.
- ❑ One in eight plant species are in danger of extinction within the next 30 years (ICUN Red List).
- ❑ “Half of bird and mammal species will be gone in 200 to 300 years”.
- ❑ One species is going extinct every 20 minutes [**one species every 10,000 years (geological)**] [The current rate of extinction is 1500 times greater than the normal, sustainable extinction rate.]

# CAUSES OF SIXTH MASS EXTINCTION

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- ❑ Habitat Loss: fragmentation, degradation, and outright destruction of ecosystems that support native ecosystems (leading cause).
- ❑ Over-harvesting: the removal of species at rates that exceed reproduction
- ❑ Pollution: introduction of harmful agents that reduce the effectiveness of a species' adaptations