



MOTIVATION

Global ocean is interconnected through the Meridional Overturning Circulation (MOC), which redistributes heat and salt from the pole-equator-pole. The MOC and Indian summer monsoon (ISM) are two important components of the Earth's climate system, though the teleconnection between them remains elusive. Here we focus on creative applications of foraminifera as proxy indicators in Paleoceanography and Paleoclimatology. A 4.82 m gravity core collected from the southeastern part of the Arabian Sea was examined for foraminifera abundances to understand the changes in productivity and ISM variability during the Holocene.

OBJECTIVES

- To know the *paleoproductivity* during the Holocene in the southeastern Arabian Sea
- To understand the *centennial-scale* Indian summer monsoon variability during the Holocene

STUDY AREA LOCATION

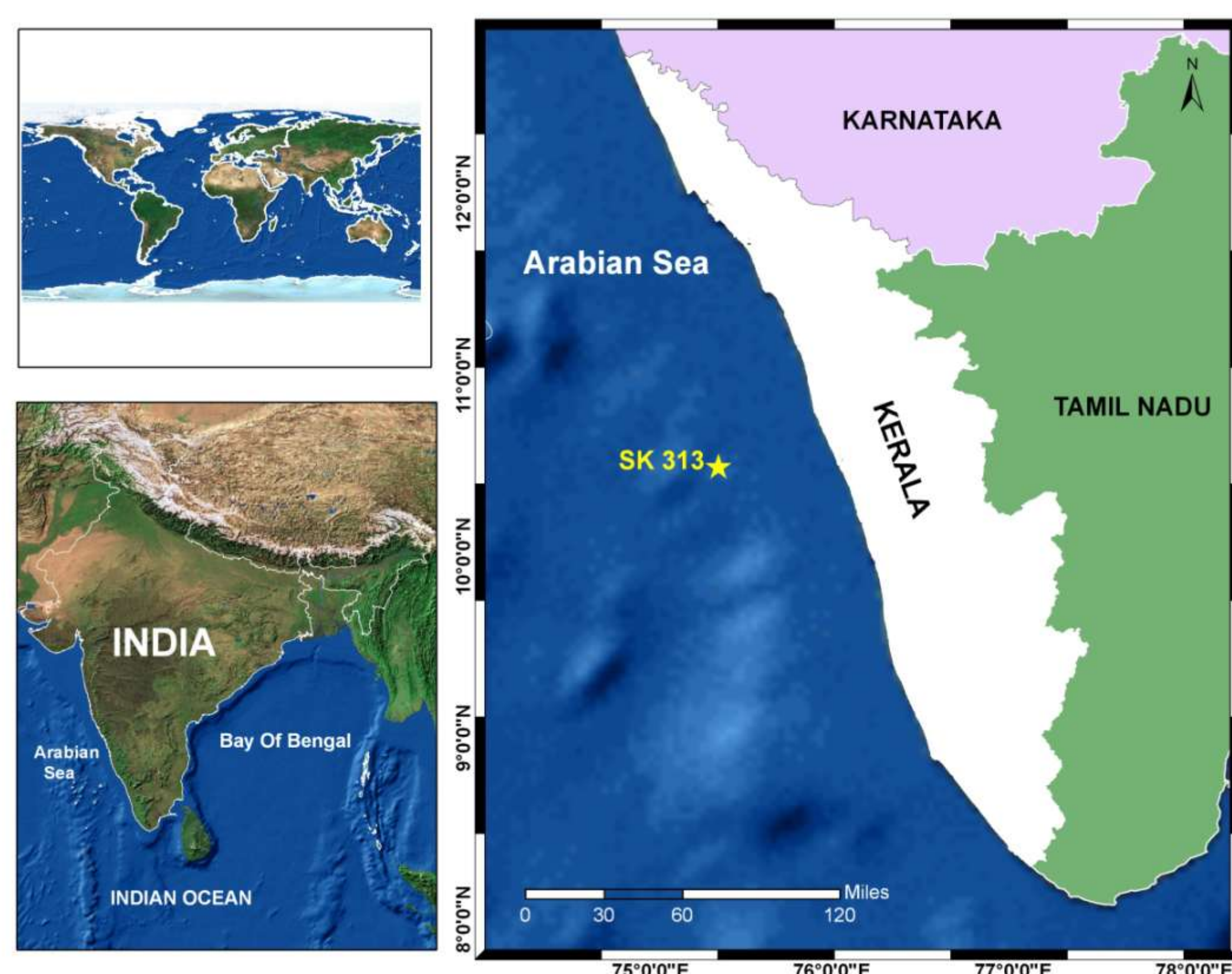


Figure 1: Location of sediment core SK-313/GC-1.

METHODOLOGY (5)



Figure 2: Images of various stages of sediment sample preparation for foraminifera analysis

RESULTS

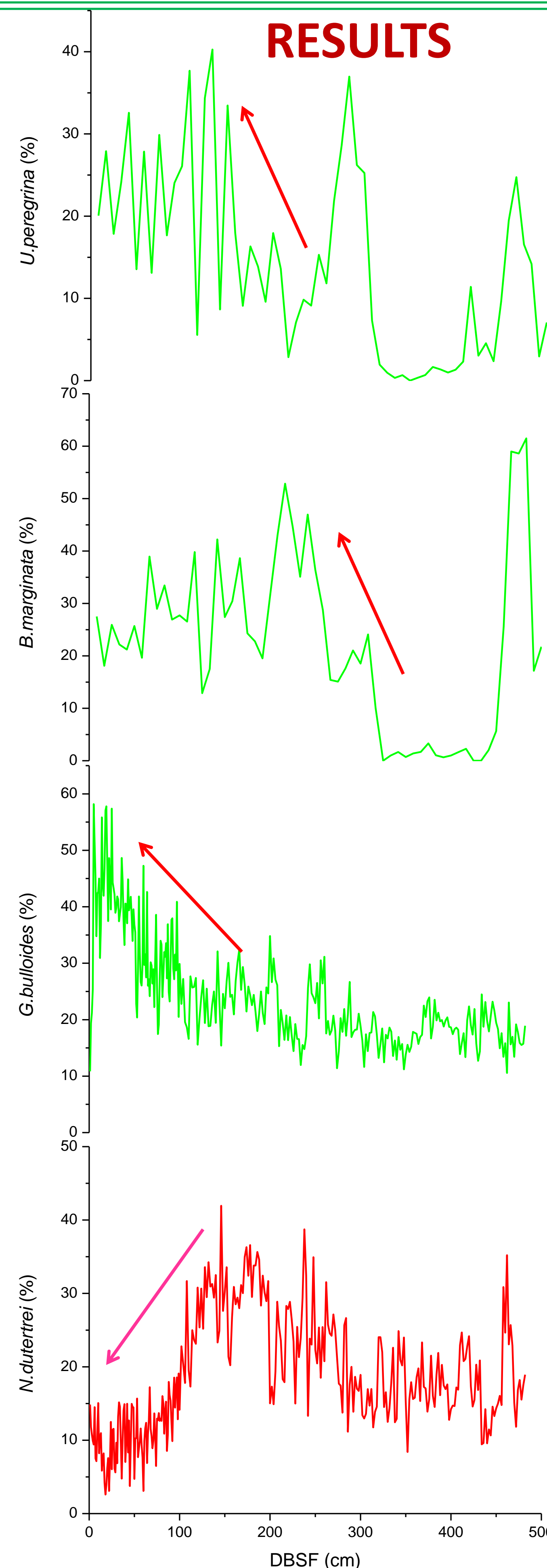


Figure 3: Relative abundances of dominant foraminifera species in core SK-313/GC-1

DISCUSSION

The dominance of the shallow in faunal species *Uvigerina peregrina* and *Bulimina marginata* benthic assemblage suggests high fluxes of organic matter and low levels of oxygenation⁽³⁾. Increasing abundances of *Globigerina bulloides*⁽²⁾ and *Uvigerina peregrina*⁽⁴⁾ indicate an increasing trend of productivity from early Holocene to the present. The planktonic foraminifera *Neogloboquadrina dutertrei* lives in the thermocline depth, making it a suitable species to detect past changes in the thermocline structure due to ENSO⁽¹⁾. The increasing trend of productivity may be due to increased monsoon. Also the observation of the productivity trend suggests that there is no uniform pattern of paleomonsoonal variability during the Holocene in the southeastern Arabian Sea.

CONCLUDING REMARKS

From the present study, the following conclusions are made: As per our research findings, the productivity in the southeastern Arabian Sea has increased since early Holocene due likely to increased upwelling and increased ISM. Similar trend may be continued in future

REFERENCES

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