

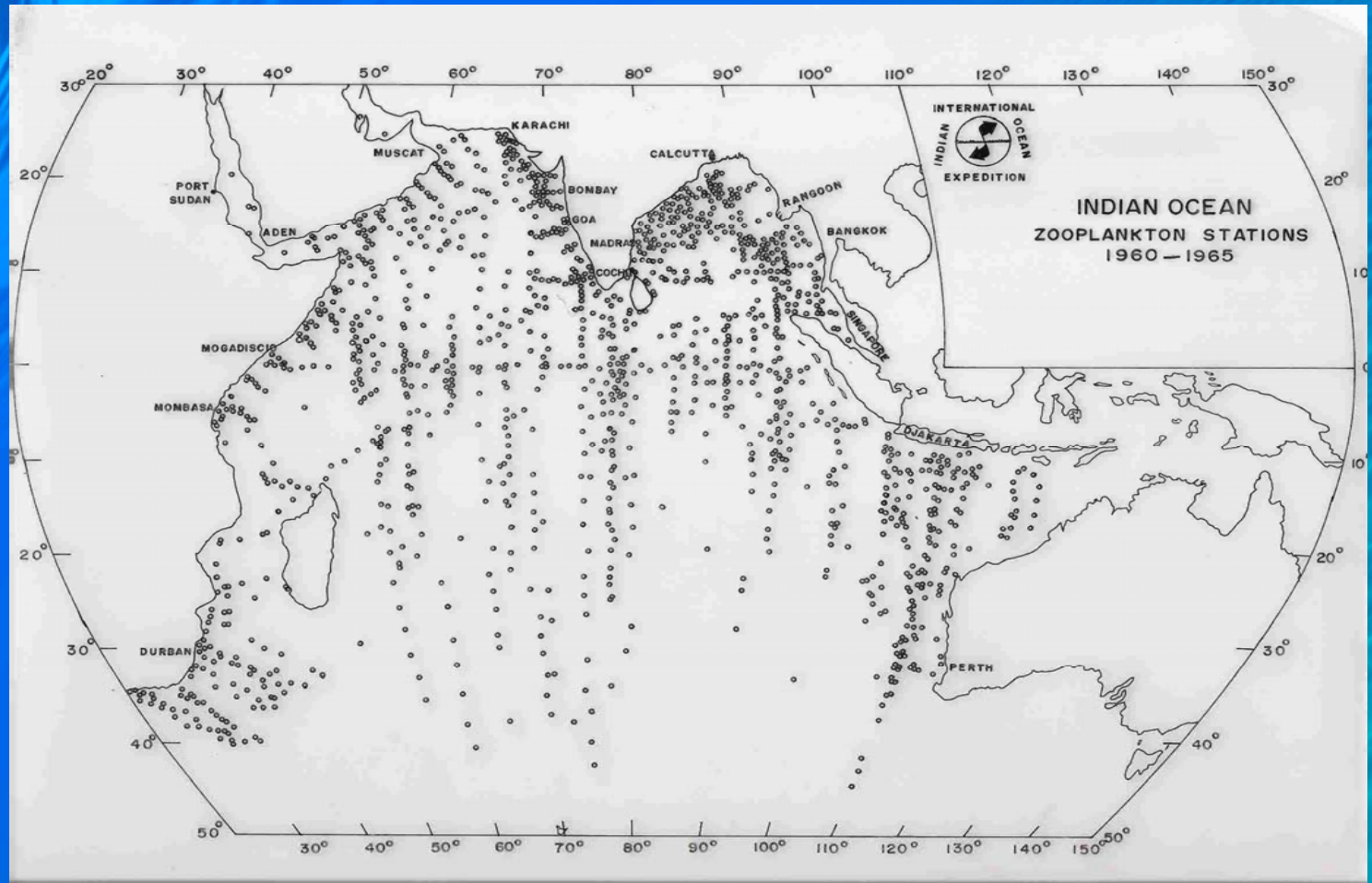
**Contributions to CMarZ : From the Indian Ocean
(2005-2010)**

by

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International Indian Ocean Expedition (IIOE) database



Prepared location (1548) map for zooplankton collections

Computerized basic & subsorting data

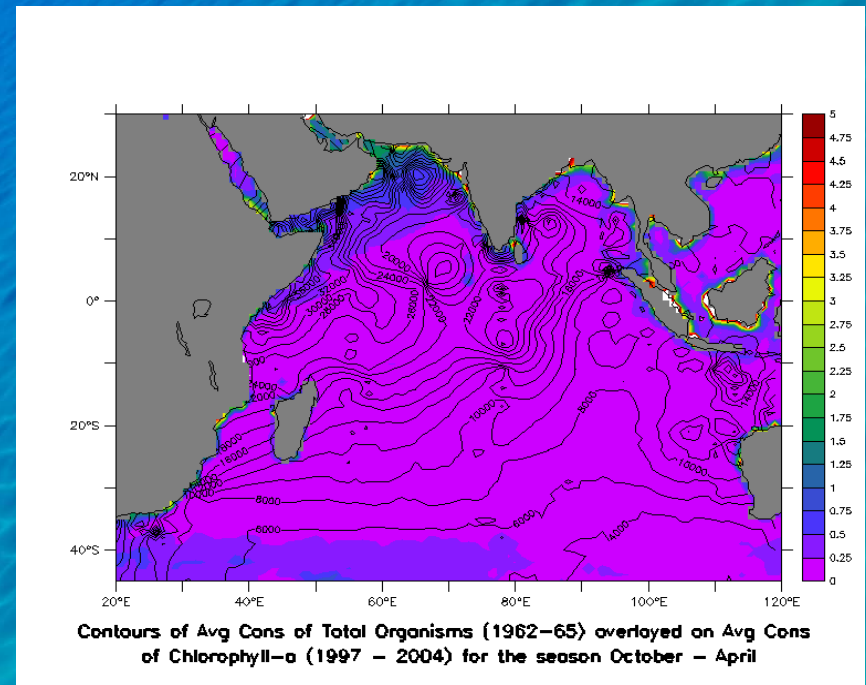
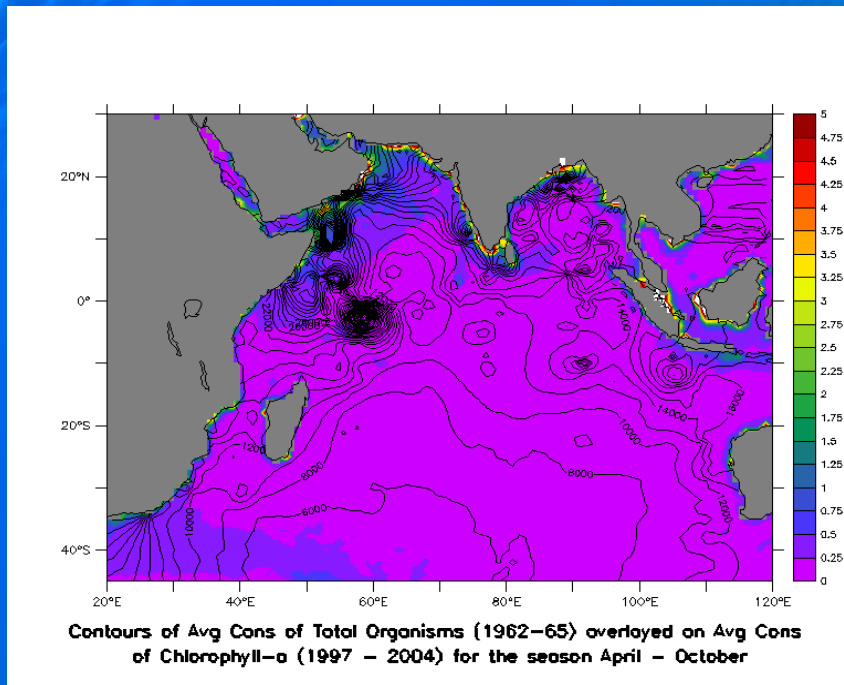
Species level data for Chaetognaths, Ostracods & Calanidae



Satellite Imagery

(Zooplankton population)

- Zooplankton data compared with the earliest available satellite data on chlorophyll a
- Zooplankton density (contours) overlaid on average chlorophyll a concentration
- A good match of chlorophyll a and zooplankton observed
- Zooplankton population maximum synchronised with high chlorophyll a



Digitised inventories

- Prepared digitised inventories for 281 species of zooplankton
 - 86 species of calanoid copepods,
 - 31 species of chaetognaths,
 - 32 species of ostracods,
 - 101 species of mysids
 - 31 species of pleuronectiformes
- These form part of CMarZ species page

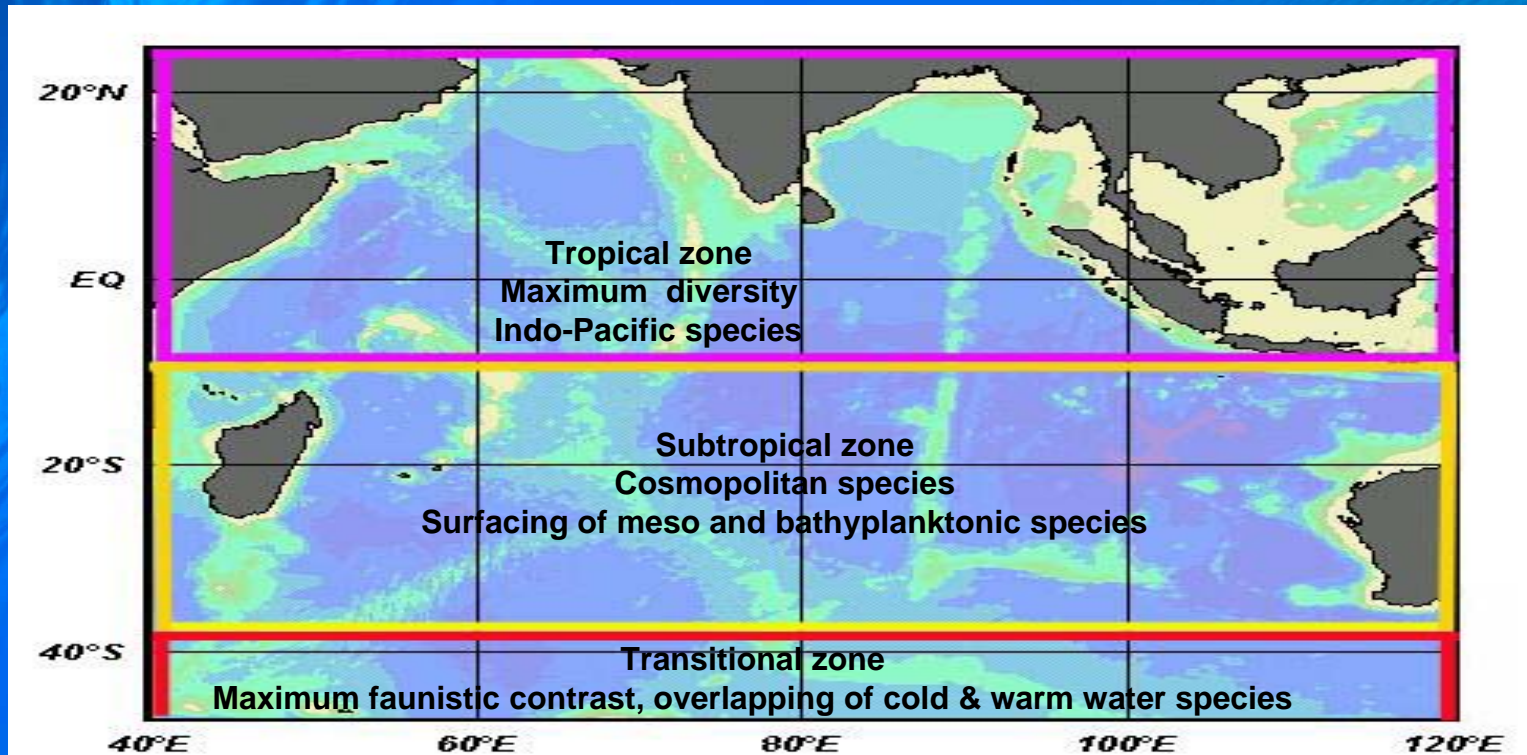


Zooplankton species from the Indian Ocean

Copepods	516 (2 new species)
Chaetognaths	33 (4 new species)
Medusae	153 (2 new species)
Ostracods	32
Euphausiids	51
Pteropods & Heteropods	47
Mysids	102 (34 new species including 4 new genera)
Decapods	84
Hyperiididae (Amphipods)	164
Fish larvae	87
Others	187
Total	1456 (42 new species)



Biogeographic provinces



- Tropical zone :**
1. North of 10°S with maximum biodiversity
 2. Dominated by Indo-Pacific species
 3. Unique in maintaining species in respective bathymetric level
- Subtropical zone :**
1. Dominated by cosmopolitan species
 2. Meso and bathypelagic species penetrate to upper strata
- Transitional zone :**
1. Maximum faunistic contrast
 2. Species of southern cold water and warm waters overlap

Biodiversity of the Andaman sea

- Collections at 33 locations during 2003-2006
- Twenty species of chaetognaths including new species *Krohnitta balagopali* & *Sagitta meenakshiae*
- 199 species of calanoid copepods, 74 species of fish larvae, 70 species of decapod larvae
- 7 species of mysids, 10 species of appendicularians and 8 species of ostracods (from coastal waters)



CMarZ cruise and analyses:

- **Saramma & Lalithambika participated in RV Ronald H. Brown Cruise**
- **Identified 11 species of mysids and 43 species of fish larvae**
- **Annelies & Vijayalakshmi studied chaetognaths**



Barcoding of zooplankton

Barcoded 10 species of chaetognaths belonging to 3 genera

7 species of copepods

3 species of mysids

3 species of euphausiids



LIST OF ZOOPLANKTON SPECIES BARCODED

Chaetognaths

1. *Eukrohnia fowleri*
2. *Pterosagitta draco*
3. *Sagitta bedoti*
4. *Sagitta hexaptera*
5. *Sagitta bipunctata*
6. *Sagitta enflata*
7. *Sagitta neglecta*
8. *Sagitta pulchra*
9. *Sagitta regularis*
10. *Sagitta robusta*

Euphausiids

1. *Stylocheiron elongatum*
2. *Thysanopoda orientalis*
3. *Euphausia diomedea*

Copepods

1. *Acartia tropica*
2. *Bestiolina similis*
3. *Canthocalanus pauper*
4. *Corycaeus sp.*
5. *Eucalanus subcrassus*
6. *Euterpina acutifrons*
7. *Labidocera acuta*

Mysids

1. *Mesopodopsis orientalis*
2. *Mesopodopsis zeylanica*
3. *Rhopalophthalmus indicus*



Publications

Francis, K. X., Nair, V. R., Rajesh, G., Lokahbharathi, P. A., and Shanta Nair, 2009. DNA barcoding of Chaetognatha. Presented at MarBOL Symposium and Workshop, Woods Hole Oceanographic Institution, Woods Hole, MA.

Nair, V. R., Rajesh, G., Francis, K. X., and Nair, S. Molecular identification of the Genus