

The influence of hydrographic parameters on the vertical and spatial distribution of calanoid copepod species on the shelf off SW Sulawesi (Indonesia)

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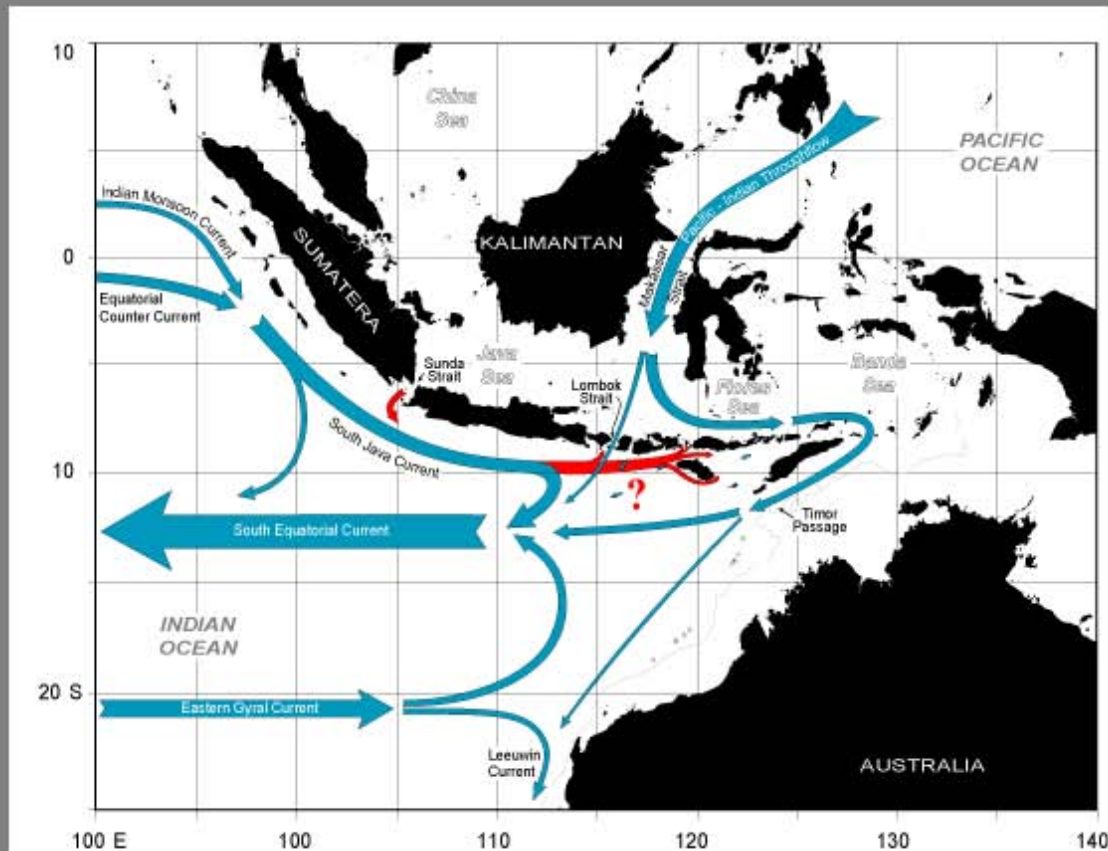


Science of the Protection of Indonesian Coastal Marine Ecosystems - A German-Indonesian Initiative in Earth System Research (2003 - 2007)

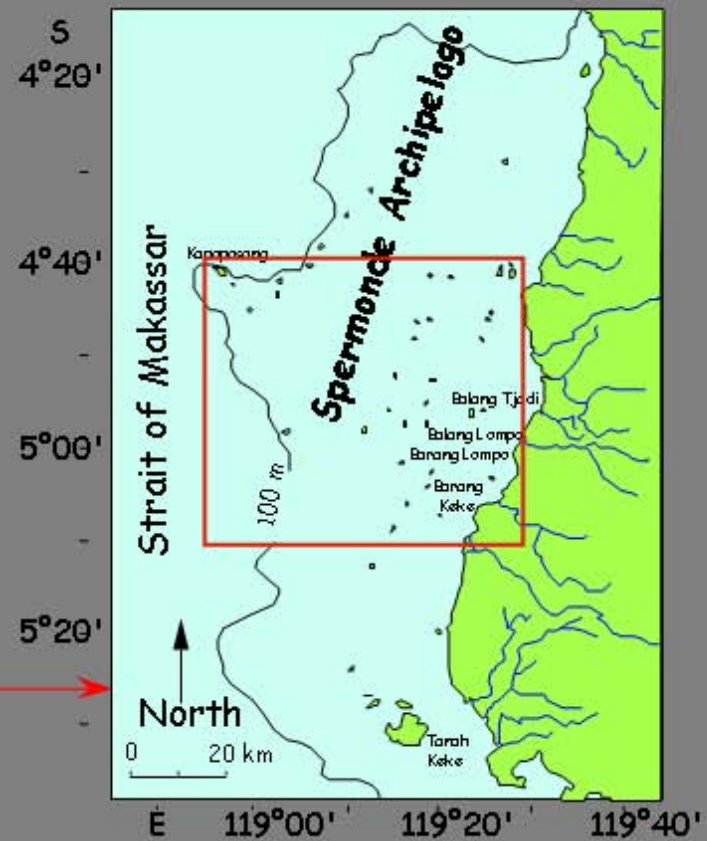
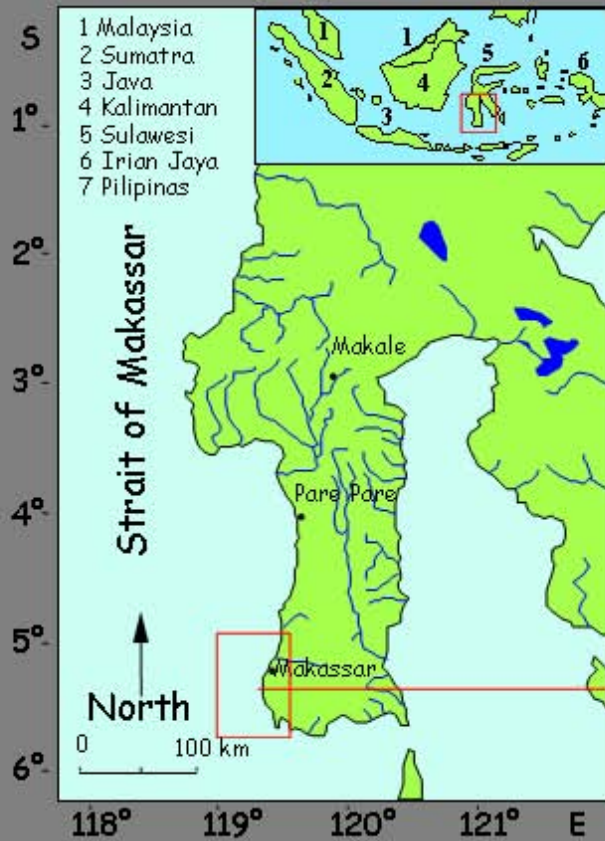
Marine ecological assessments of coral reefs, seagrass beds and plankton focussing on anthropogenic impacts, blast-fishing and land-based sources of pollution.

Zooplankton studies with focus on copepods and meroplanktonic larvae.

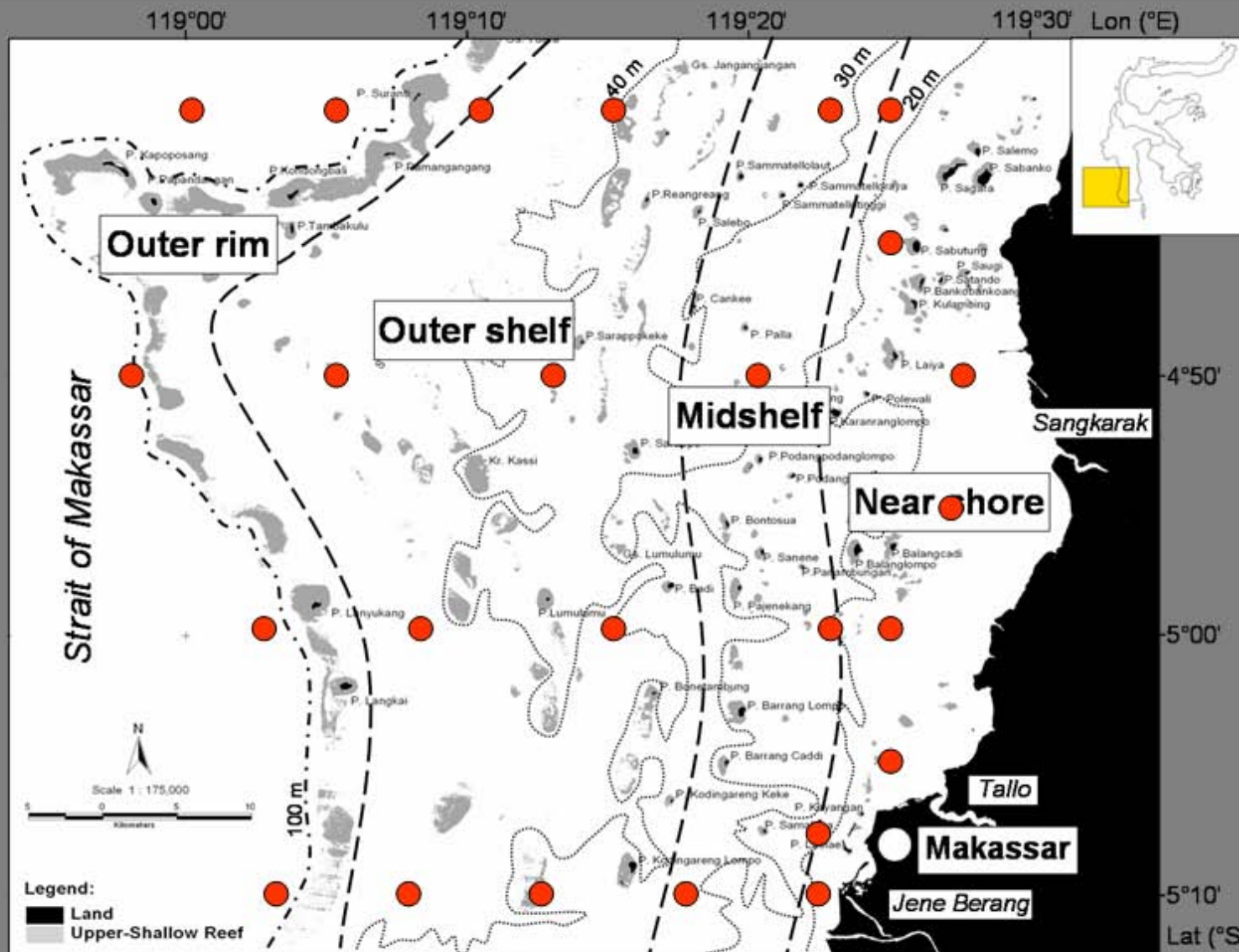
Is there a distinct separation between offshore and coastal regions in the copepod community structure?



http://tryfan.ucsd.edu/woce_ioe/woce_ioe.htm



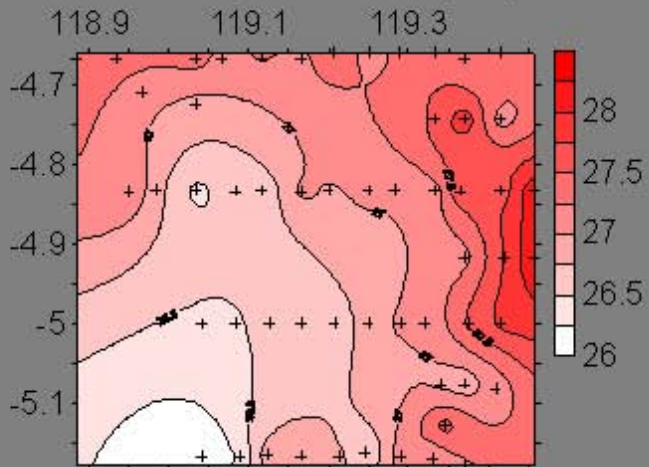
Spermonde Archipelago



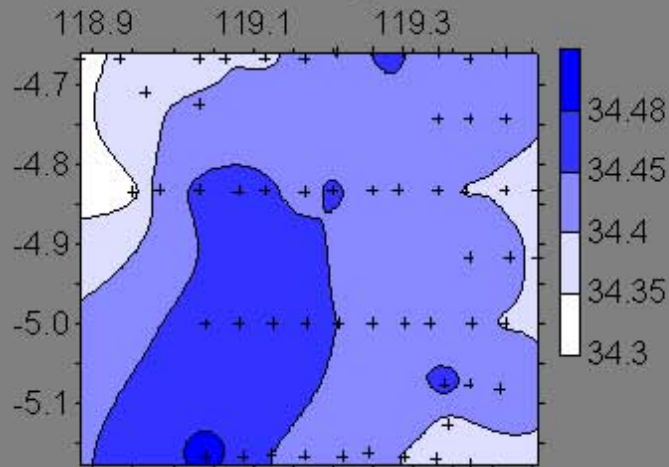
●
Sampling stations
September 2005

September 2005

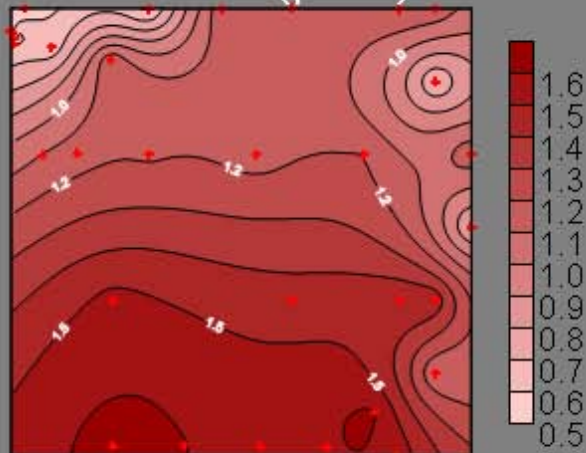
Temperature (°C)



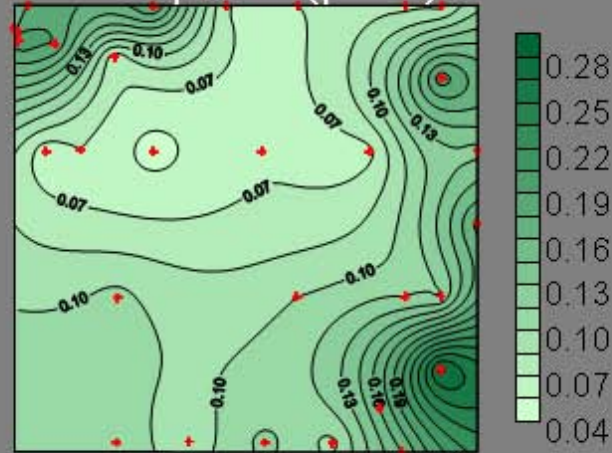
Salinity



Nitrate (μMol)

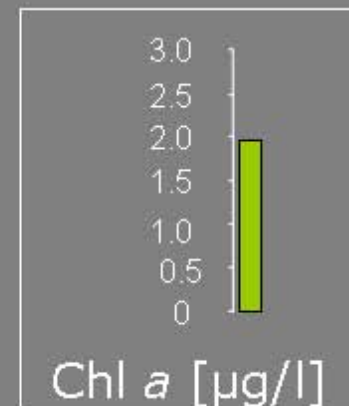


Phosphate (μMol)



Chlorophyll a

September 2005



Chl a [$\mu\text{g/l}$]

At 3 m depth

Chlorophyll *a* concentration higher near shore

Near shore area phosphate enriched

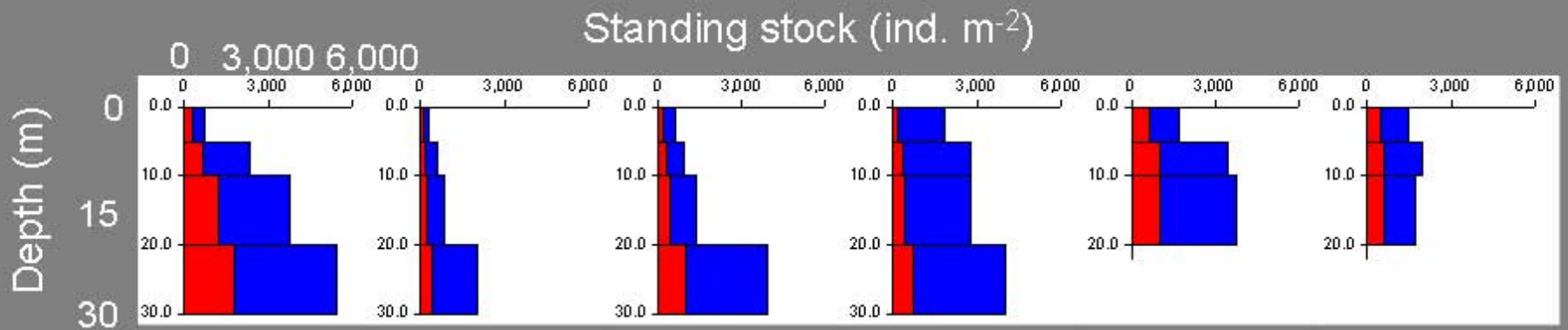
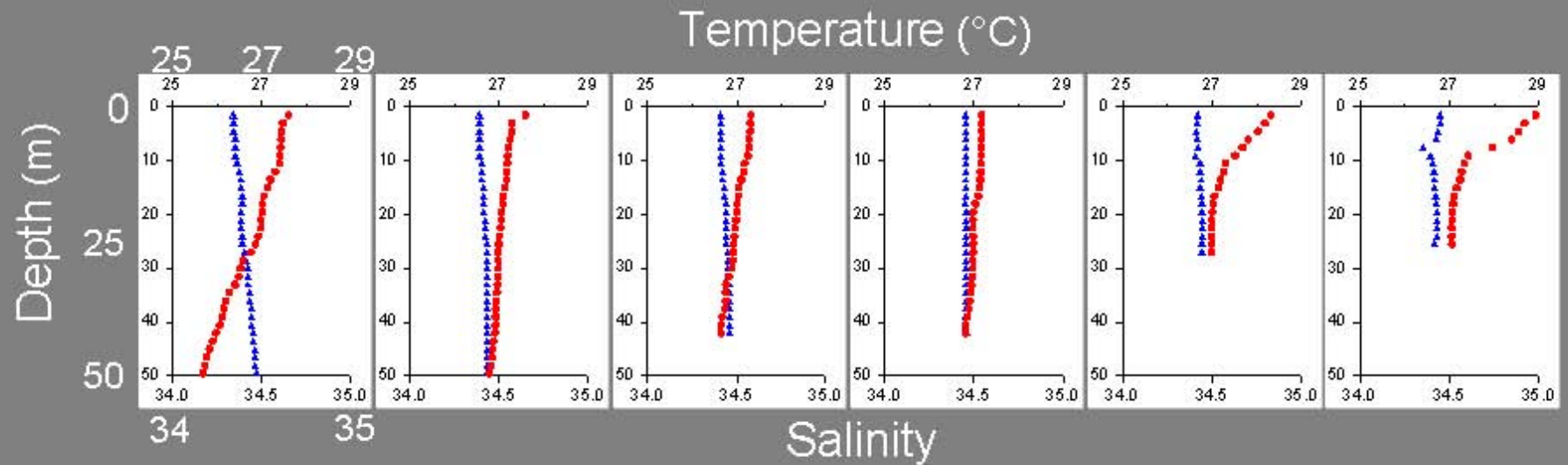
Temperature, Salinity and Nitrate show southern inflow of colder, more saline and nitrate enriched water

SW inflow might be a result from a local upwelling event during the SE Monsoon

Sampling period: September 2005 (Dry season)

Zooplankton sampling: Apstein-net
 Mesh size 200 μm
 Stratified vertical tows

Species identification only for adult calanoid copepods



Total number of species: 67+ (+5 juvenile)

Dominant group with 15+ species:

Paracalanidae

Acrocalanus gibber
Acrocalanus gracilis
Acrocalanus longicornis
Acrocalanus monachus
Bestiolina similis
Calocalanus spp.
Calocalanus pavo
Calocalanus plumulosus
Delius nudus
Paracalanus cf. *tropicus*
Paracalanus aculeatus
Paracalanus denudatus
Paracalanus indicus
Parvocalanus crassirostris
Parvocalanus scotti

Other important species:

Canthocalanus pauper
Cosmocalanus darwini
Clausocalanus farrani
Clausocalanus furcatus
Metacalanus aurivilli
Temora turbinata
Acartia negligens
Acartia erythraea
Acartia pacifica
Tortanus gracilis

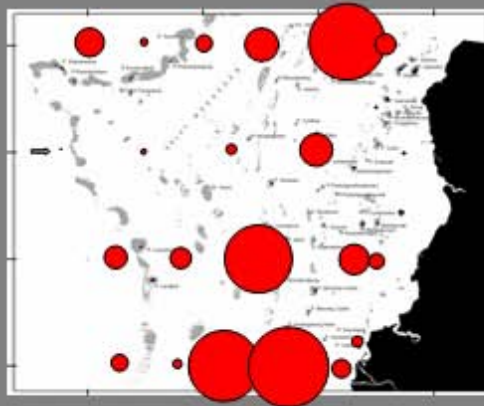
Species number: Near shore 9 – 20
 Midshelf 11 - 25
 Outer shelf 12 - 25
 Outer rim 21 - 36

Paracalanidae dominant at all stations: 70 – 90% of all adults

Dominant species:
(of all Calanoida)

- Paracalanus indicus* 9%
- Parvocalanus crassirostris* 8%
- Bestiolina similis* 6%
- Parvocalanus scotti* 4%
- Paracalanus cf. tropicus* 4%

Paracalanus indicus



Paracalanus aculeatus



○ 8000 ind. m⁻²

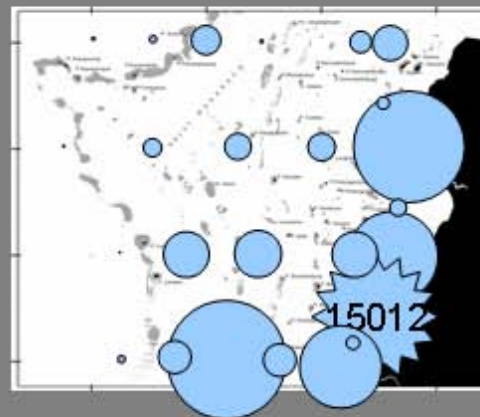
○ 4000 ind. m⁻²

○ 2000 ind. m⁻²

Bestiolina similis



Parvocalanus spp.



offshore

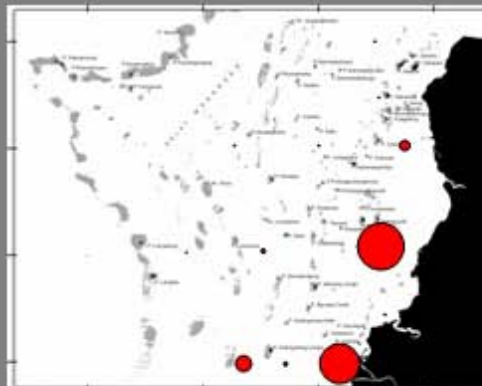


coastal

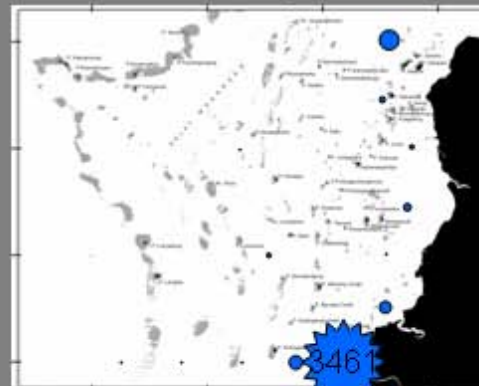
Acartia danae
Acrocalanus longicornis
Calanopia australica, *C. minor*
Candacia catula, *C. curta*,
C. pachydactyla
Centropages calaninus, *C. elongatus*
Clausocalanus furcatus,
C. mastigophorus
Cosmocalanus darwini
Euchaeta media
Labidocera acuta
Mecynocera clausi
Pareucalanus attenuatus, *P. sewelli*
Rhincalanus rostrifrons
Scolecithricella timida
Scolecithrix danae
Subeucalanus crassus, *S. mucronatus*,
S. pileatus, *S. subcrassus*
Temora discaudata, *T. stylifera*
Undinula vulgaris

Acartia erythraea, *A. pacifica*
Metacalanus aurivilli
Pseudodiaptomus aurivilli, *P. clevei*
Temora turbinata
Tortanus gracilis, *T. barbatus*

Metacalanus aurivilli



Acartia erythraea

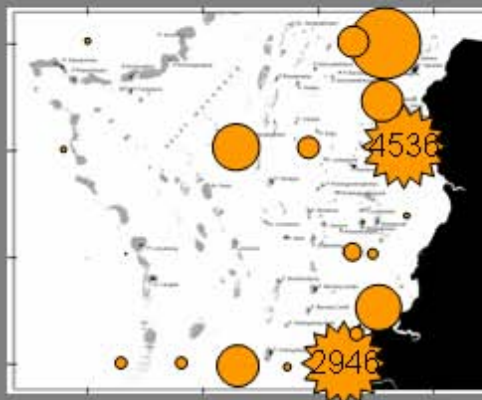


○ 2000 ind. m⁻²

○ 1000 ind. m⁻²

○ 500 ind. m⁻²

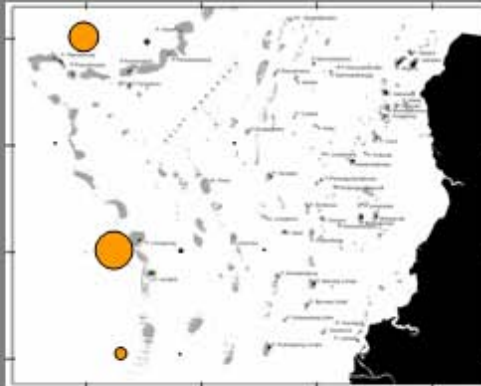
Temora turbinata



Tortanus gracilis



Clausocalanus farrani



Subeucalanus pileatus

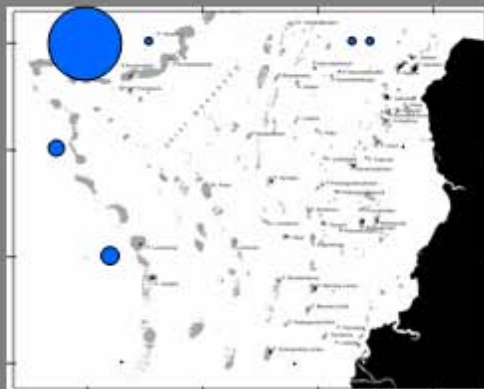


○ 2000 ind. m⁻²

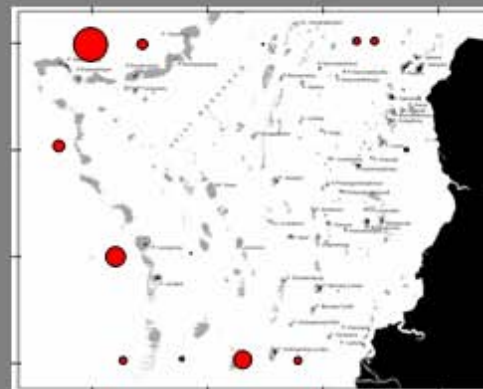
○ 1000 ind. m⁻²

○ 500 ind. m⁻²

Cosmocalanus darwini



Canthocalanus pauper



Higher abundance below 10 m at most stations

Species numbers distinctly higher at the offshore stations

Paracalanidae dominant at all stations, but importance differs

Offshore species composition considerably different from that of coastal stations

Other calanoid species are distinctly separated by their distribution

Clear separation between oceanic and coastal communities

Oceanic species hardly occur on the reef area

Coastal pollution probably does not result in a lower species number

Species of the Paracalanidae are not separated according to hydrography but rather by food preferences or competition

Thank you for your attention!!

