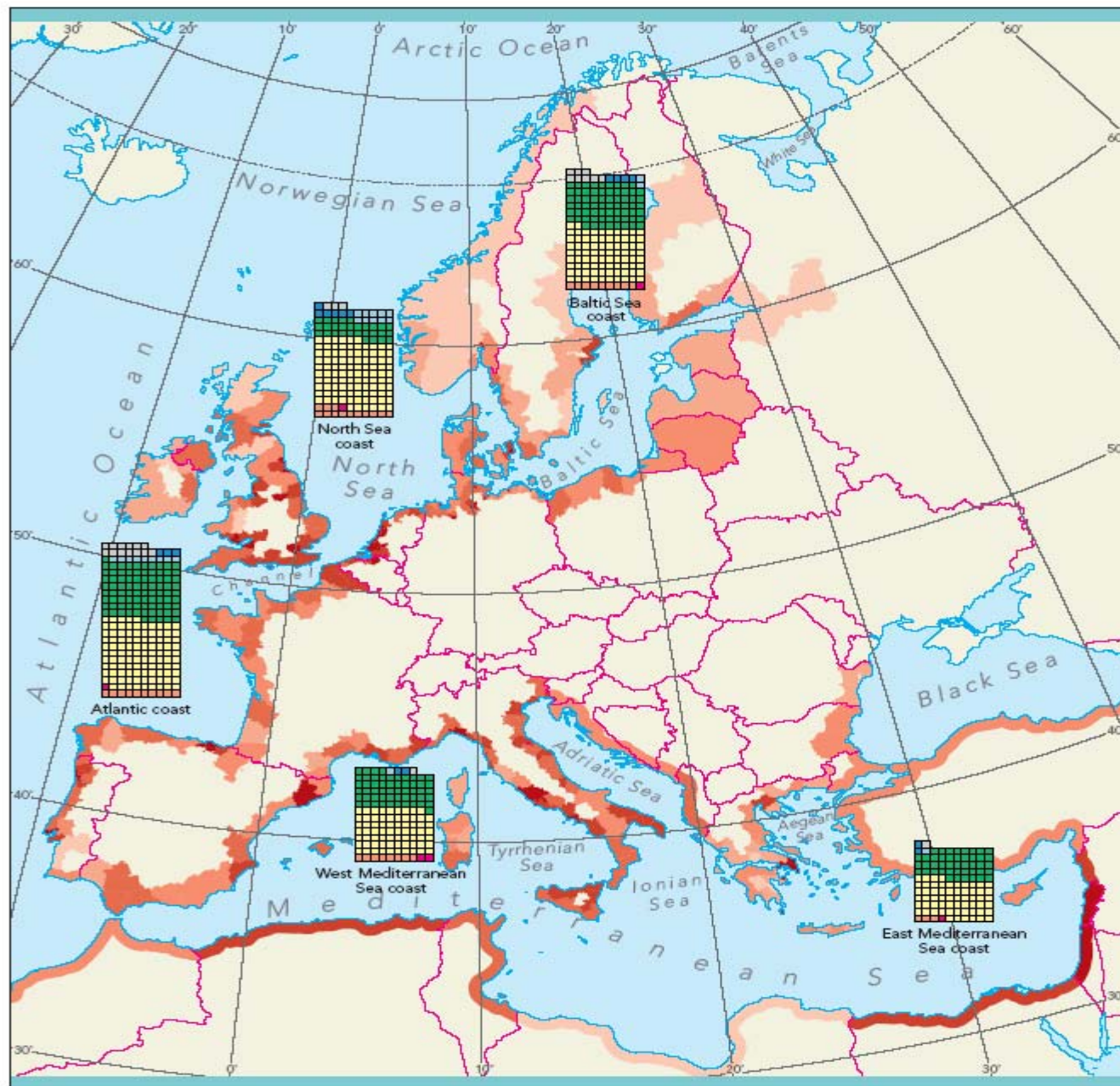


Biodiversity of the southeastern Baltic – concerns and perspectives

Elmira Boikova

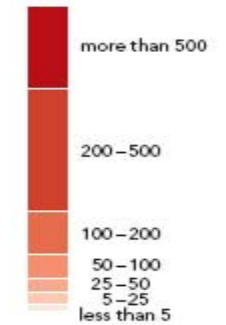
Laboratory of Marine Ecology
Institute of Biology
University of Latvia



Population density and land cover in coastal areas

0 500 km

Inhabitants per km²



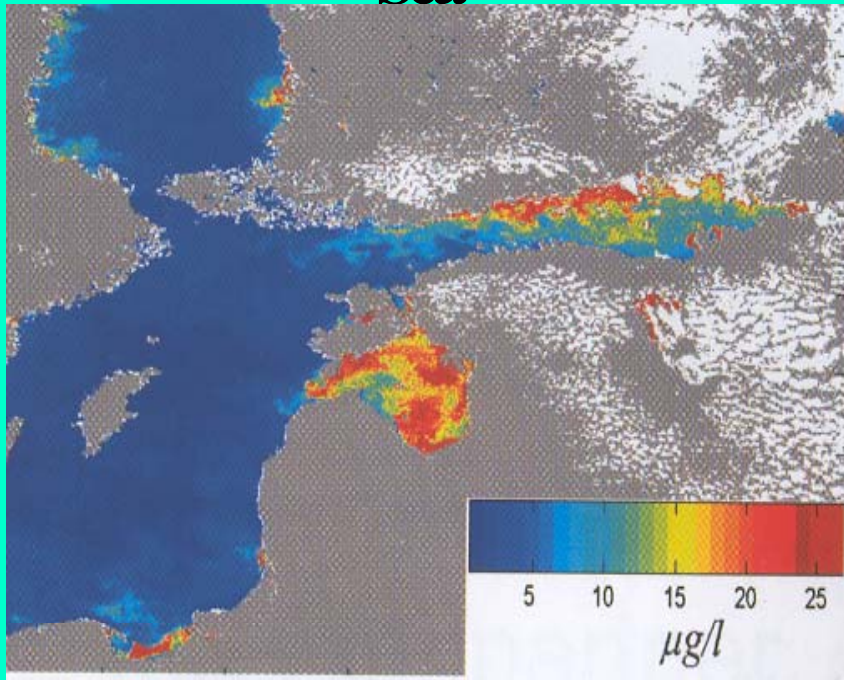
Land cover area in coastal zone (one cell of the diagram = 500 km²)

- urban fabric
- industrial, commercial and transport units
- agricultural areas
- forests and semi-natural land
- wetlands
- lagoons, estuaries
- not classified

Map 3.14.2

Source: Land Use: CORINE Land Cover; Population data: EEA, 1996 (modified from GISCO 1996); CORINAIR Emissions Inventory, 1990;- Blue Plan

The Eutrophication of the Baltic Sea



Algae bloom in the Gulf



Common causes of Biodiversity loss

- Domestic pressure - Immigration, poverty, cultural changes
- International pressure – Macroeconomic policies, International trade factors
- Policy responses – Policy failures, domestic market factors, poor environmental law/weak enforcement, unsustainable development projects

Chlorophyll *a* trend in longterm stations

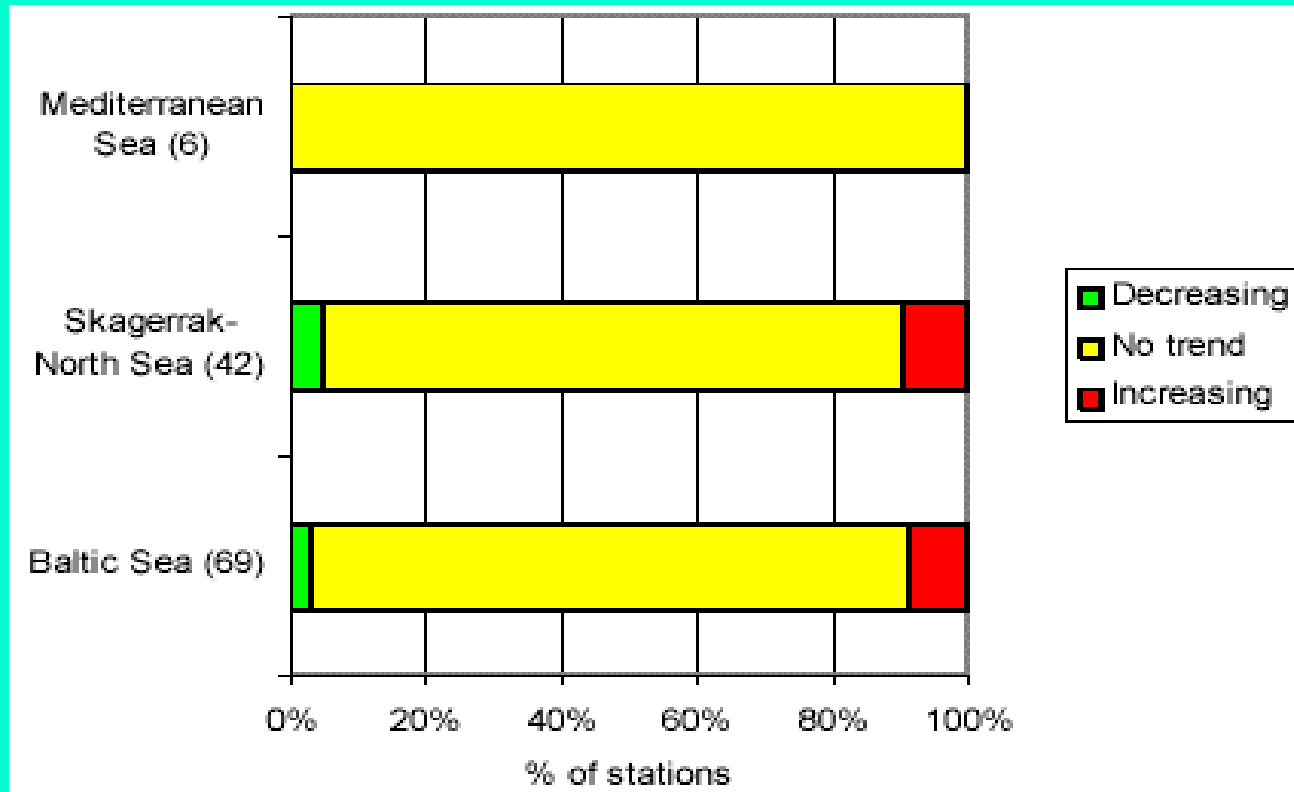
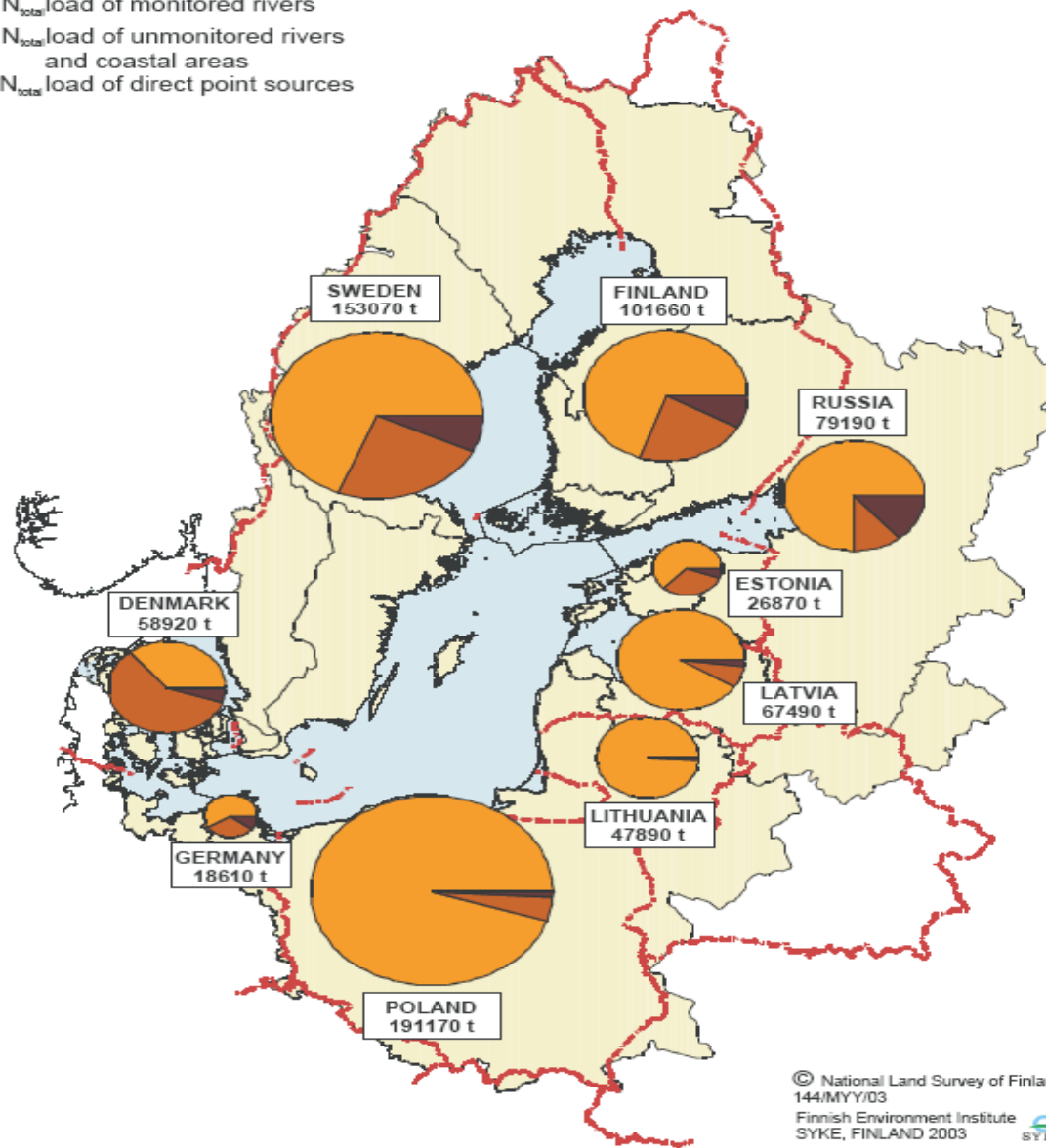


Figure 5.46:
 N_{total} load from
 monitored rivers,
 unmonitored rivers
 and coastal areas as well
 as from point sources
 discharging directly into
 the Baltic Sea in 2000
 by Contracting Party
 based on the load-ori-
 entated approach.

- N_{total} load of monitored rivers
- N_{total} load of unmonitored rivers
and coastal areas
- N_{total} load of direct point sources



The state of coastal biotopes and river impact

The “Red List” of Marine and Coastal Biotopes of the Baltic Sea presents the status of biotopes of the Baltic Sea area as evere cause for concern, as **83%** of all biotopes of the Baltic Sea area are rated as heavily ed (**15%**) or endangered (**68%**). 5 rivers –Neva, Daugava, Nemunas, Visla, Odra are responsible for close **50%** of pollution of Baltic sea waters; ; Daugava – **80%** for the Gulf of Riga.

lf of Riga.

f Riga.



The biodiversity of the Latvia flora and fauna is substantially enriched by species from the sea:

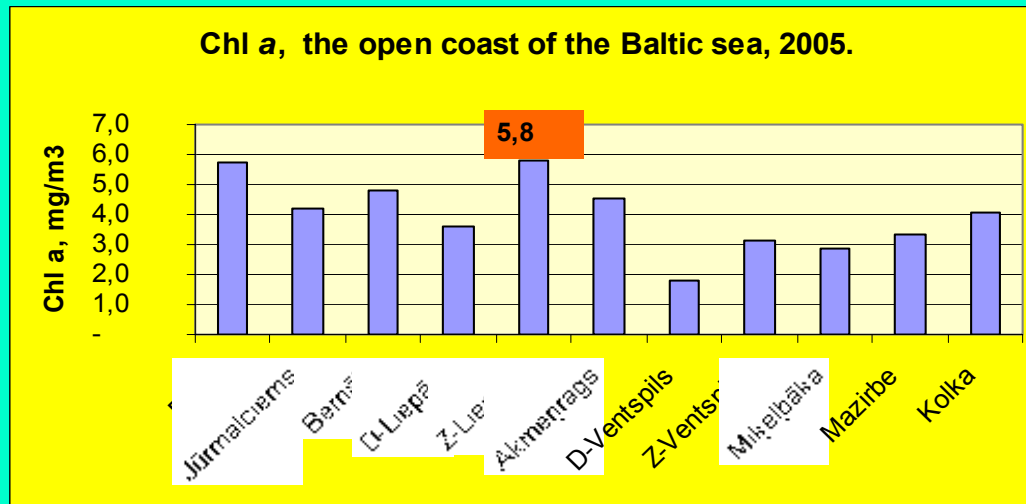
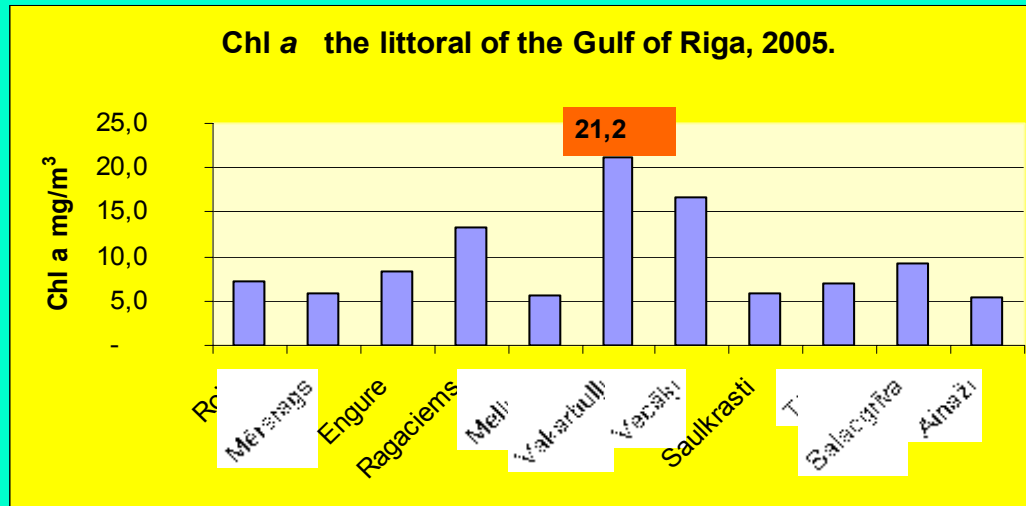
- Macrophytes – 60 species
- Benthos – 160 species
- Phytoplankton – 300 species
- Zooplankton – 50 species
- Protozooplankton – 100 species
- Fish – 50 species

Moon Jellyfish – *Aurelia aurita*

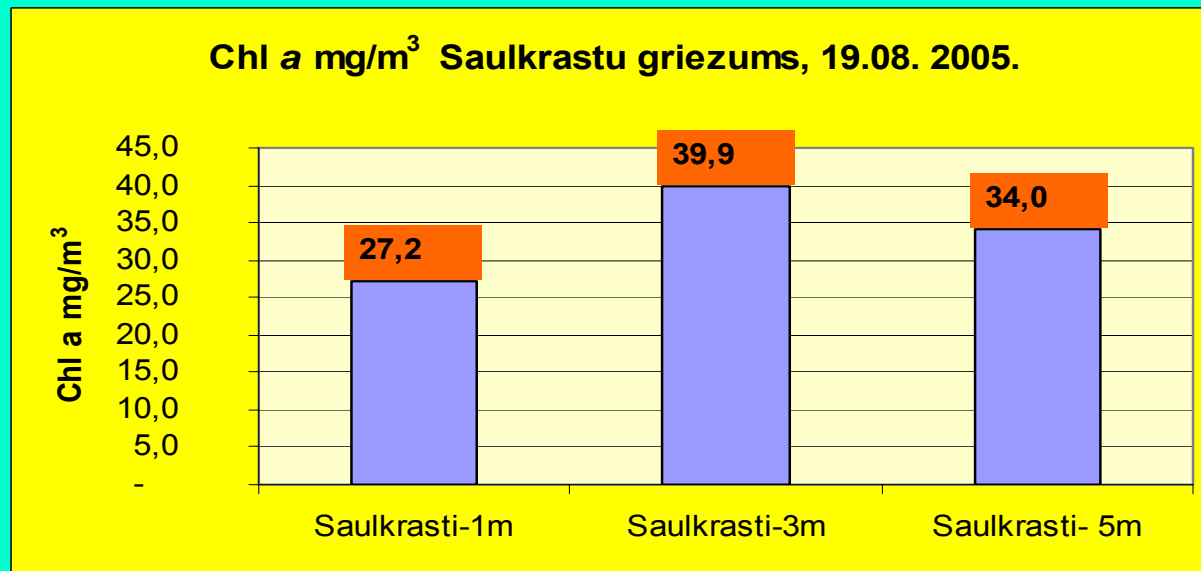
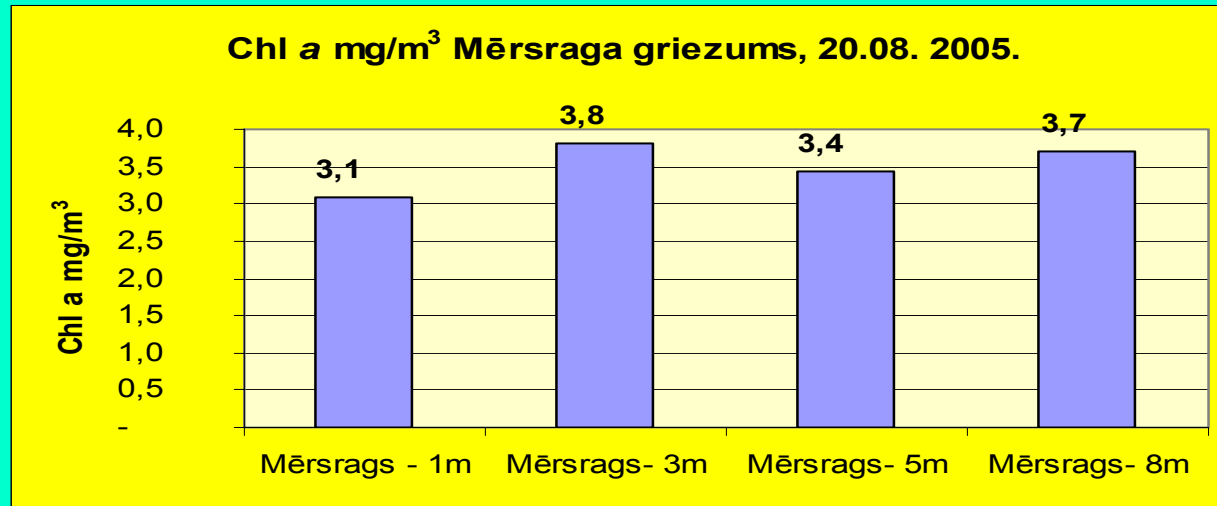
Polyp stage attached to blue mussel



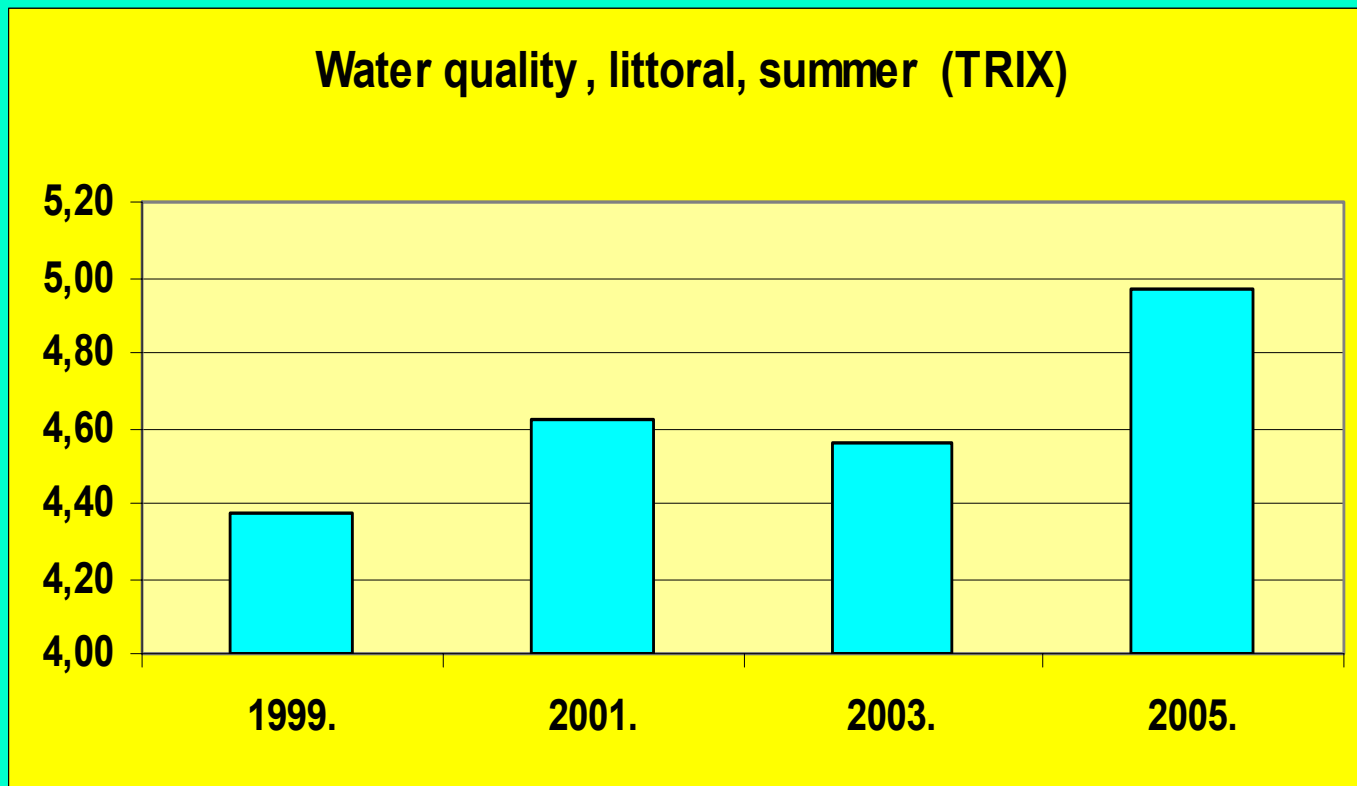
Dynamic of the chl a, coastal stations, summer, 2005



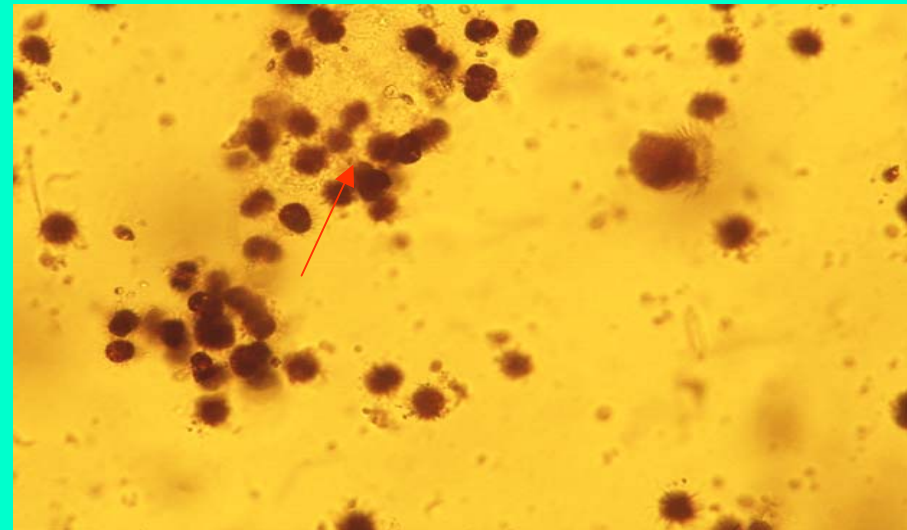
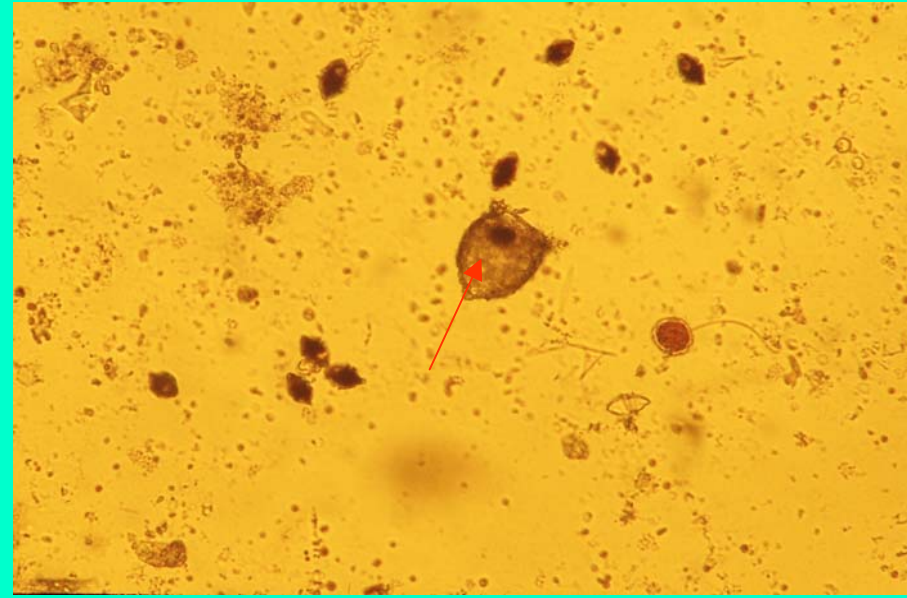
Chl a on transects in western and eastern part of the gulf of Riga

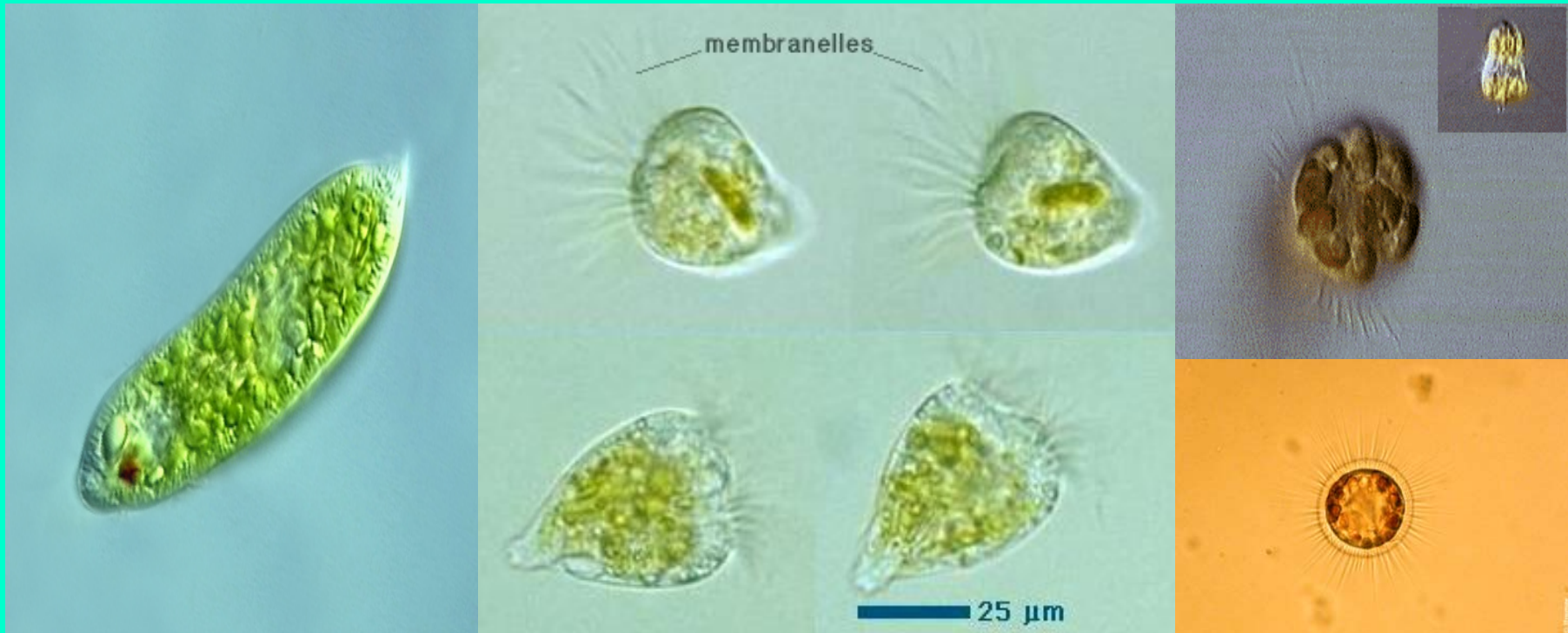


Water quality, littoral, summer



The key species of ciliates

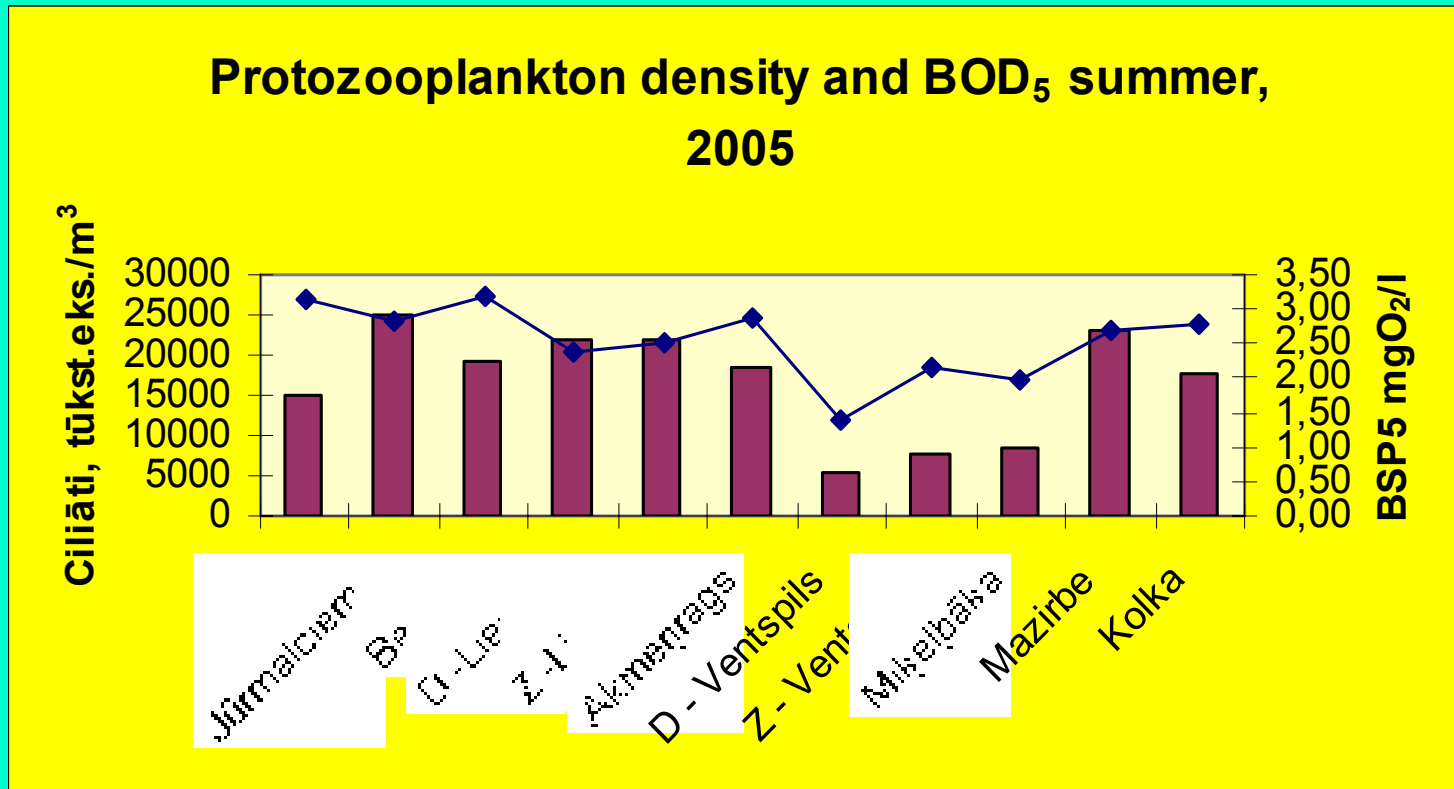




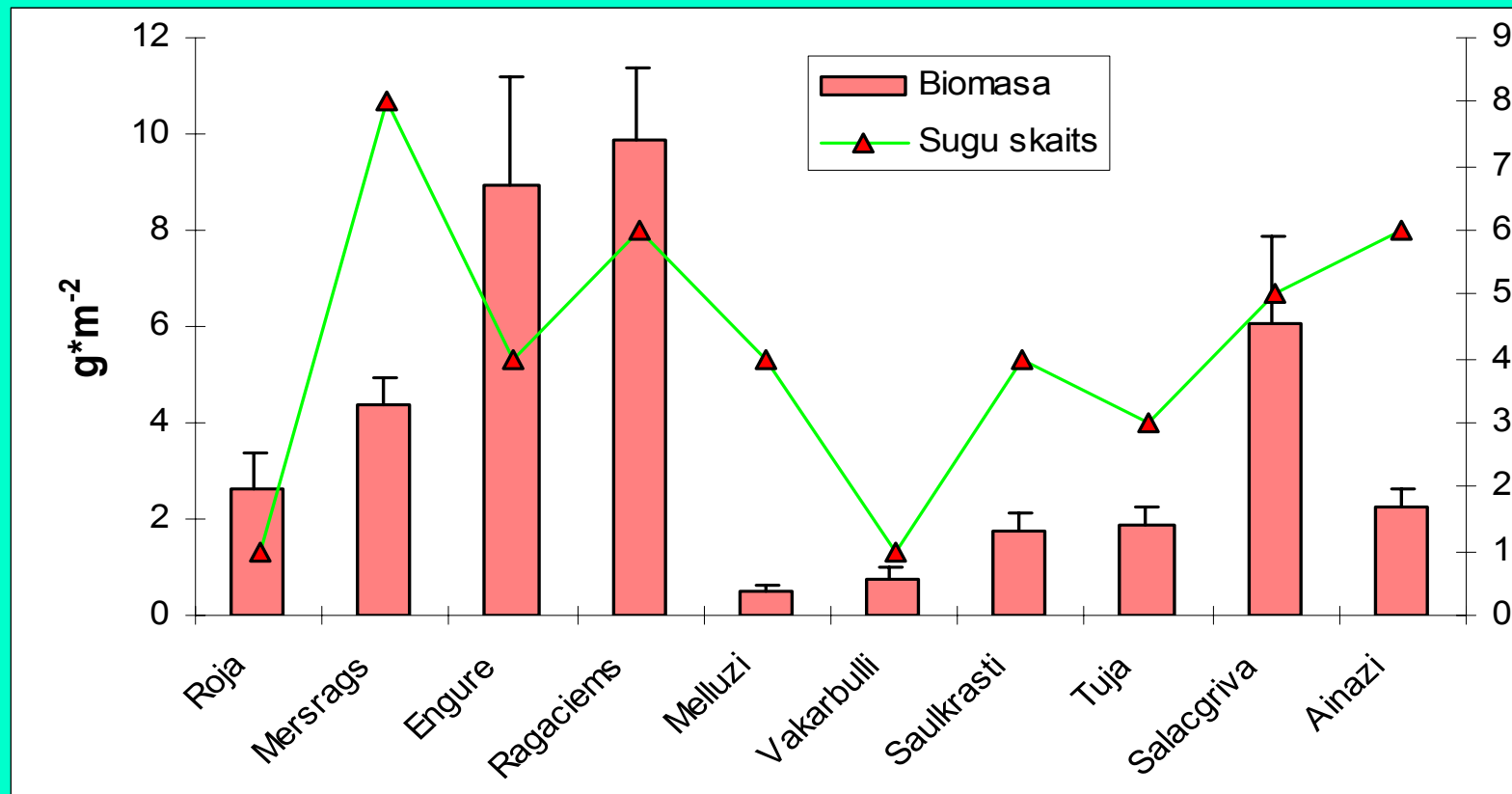
Protozoans

*Flagellata –Euglenophyta; Ciliata –
Strombidium sp., Mesodinium rubrum*

Protozooplankton density and BOD₅ summer, 2005

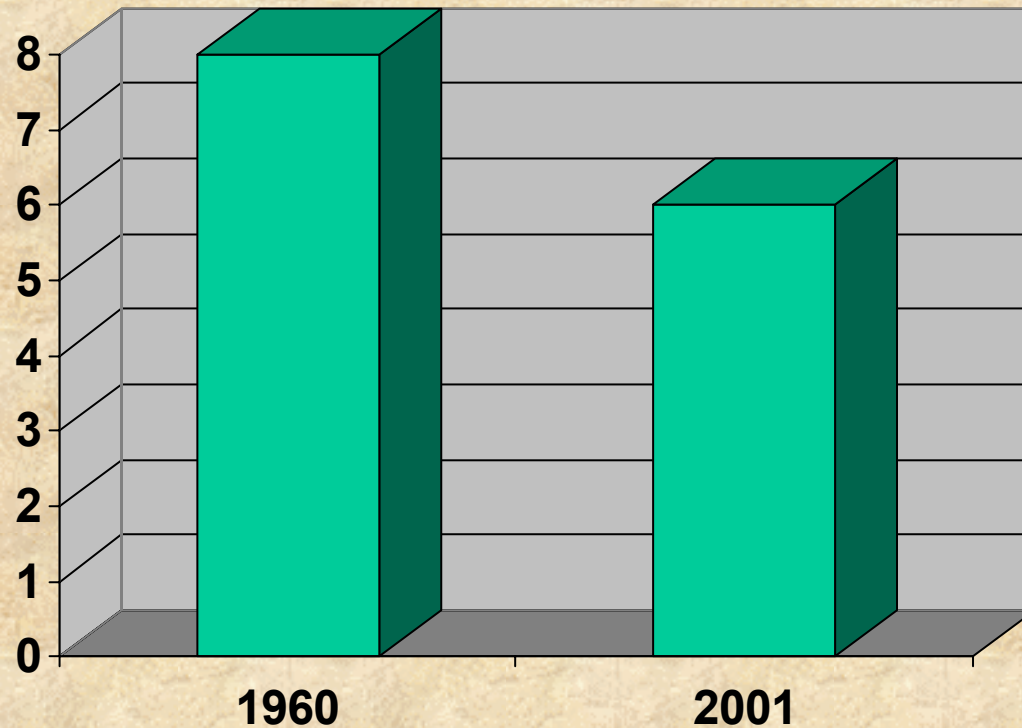


The zoobenthos distribution along the Gulf of Riga, littoral





The vertical distribution maximum in the Gulf of Riga (Mērsragā)





Thank you for attention!