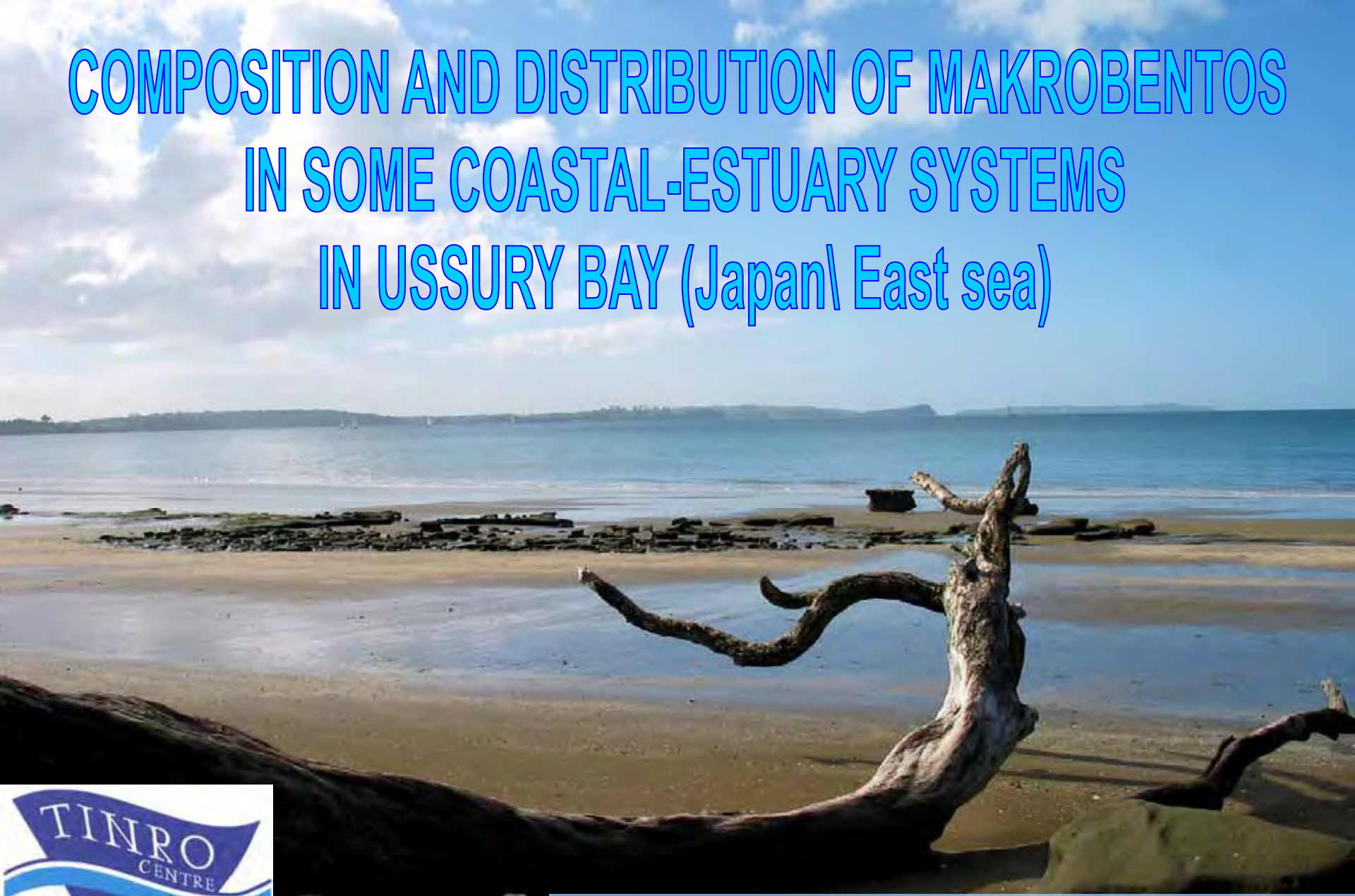
COMPOSITION AND DISTRIBUTION OF MAKROBENTOS IN SOME COASTAL-ESTUARY SYSTEMS IN USSURY BAY (Japan\ East sea)



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The Far Eastern seas shelf is rich of the benthic resources, which attract marine inhabitants for breeding and fattening.

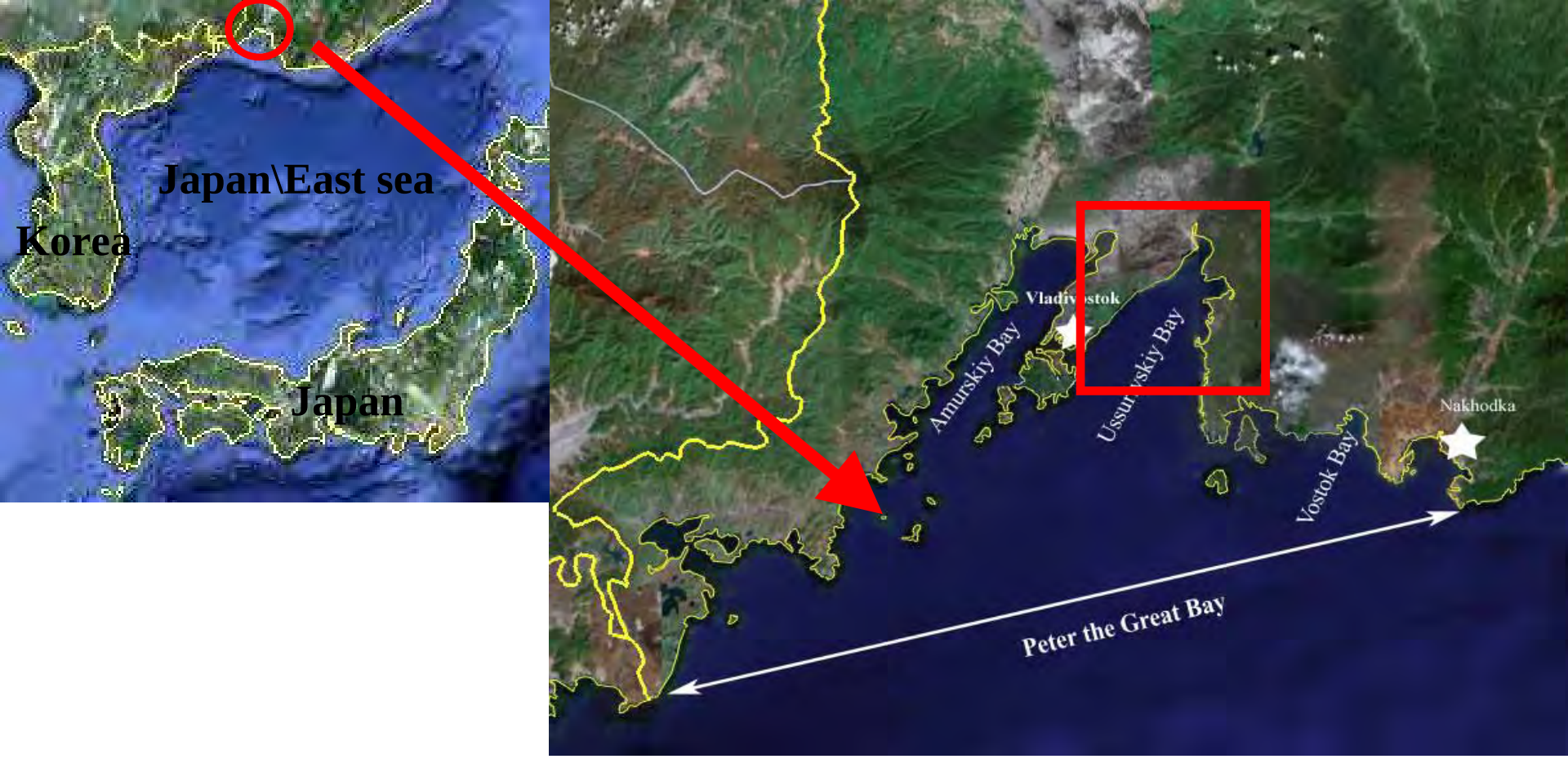
Benthos (from the Greek. Βένθος - **depth**) - a set of organisms living on the bottom – on soil and into soil. Benthos is the food supply of many benthic and demersal fishes and invertebrates.

From the 2002 the members of the benthos department of TINRO-center were making study of sea benthos only. We didn't study the freshwater benthos untill the last year.

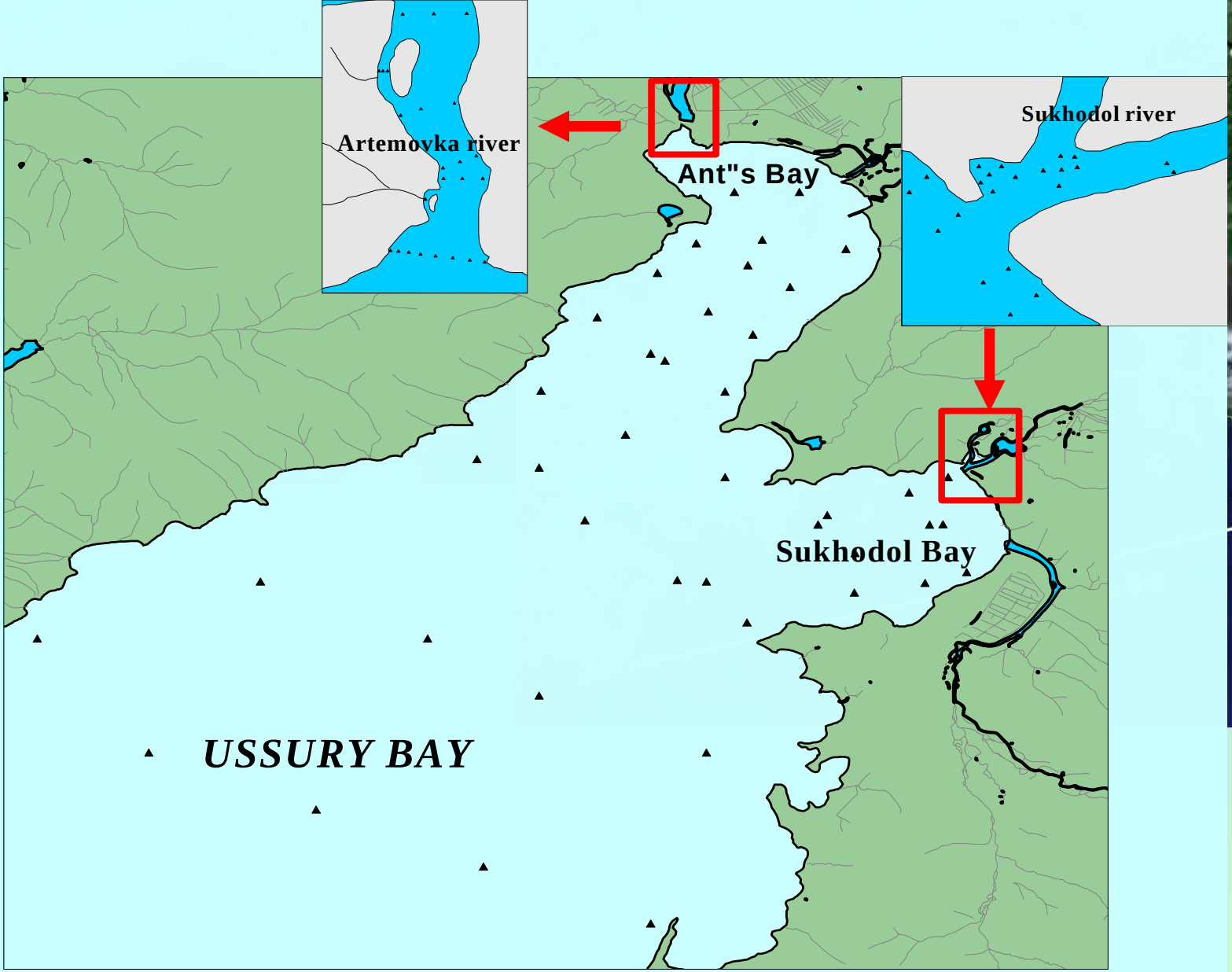
Sea and river benthos are significantly different from each other. However, they are mixed in the contact zone of marine and fresh waters.

There are specific benthic community formed in the estuaries areas. Estuarine ecosystems are characterized by high levels of organic production and play an important role in economic activity.

Macrobenthos of estuarial parts of rivers of South Primorye is almost unexplored.



Schematic map of the surveyed area and volume of work



Schematic map of the surveyed area and volume of work

Materials and methods

In Ussuri Bay benthic samples were collected in the summer 2010 in the 3-40 m. depth range by an "Van Wines" grab with an opening capability of 0.1m ^{2}. All in all, 42 stations were surveyed (3 samples usually taken at each station). Benthic communities separated out by the dominant form of biomass.

In Artemovka and Sukhodol rivers benthic samples were collected in the depth over 1 m. by “Dukeit" scraper (0.1m ²). All in all, 40 stations were taken (3 samples usually taken at each station).

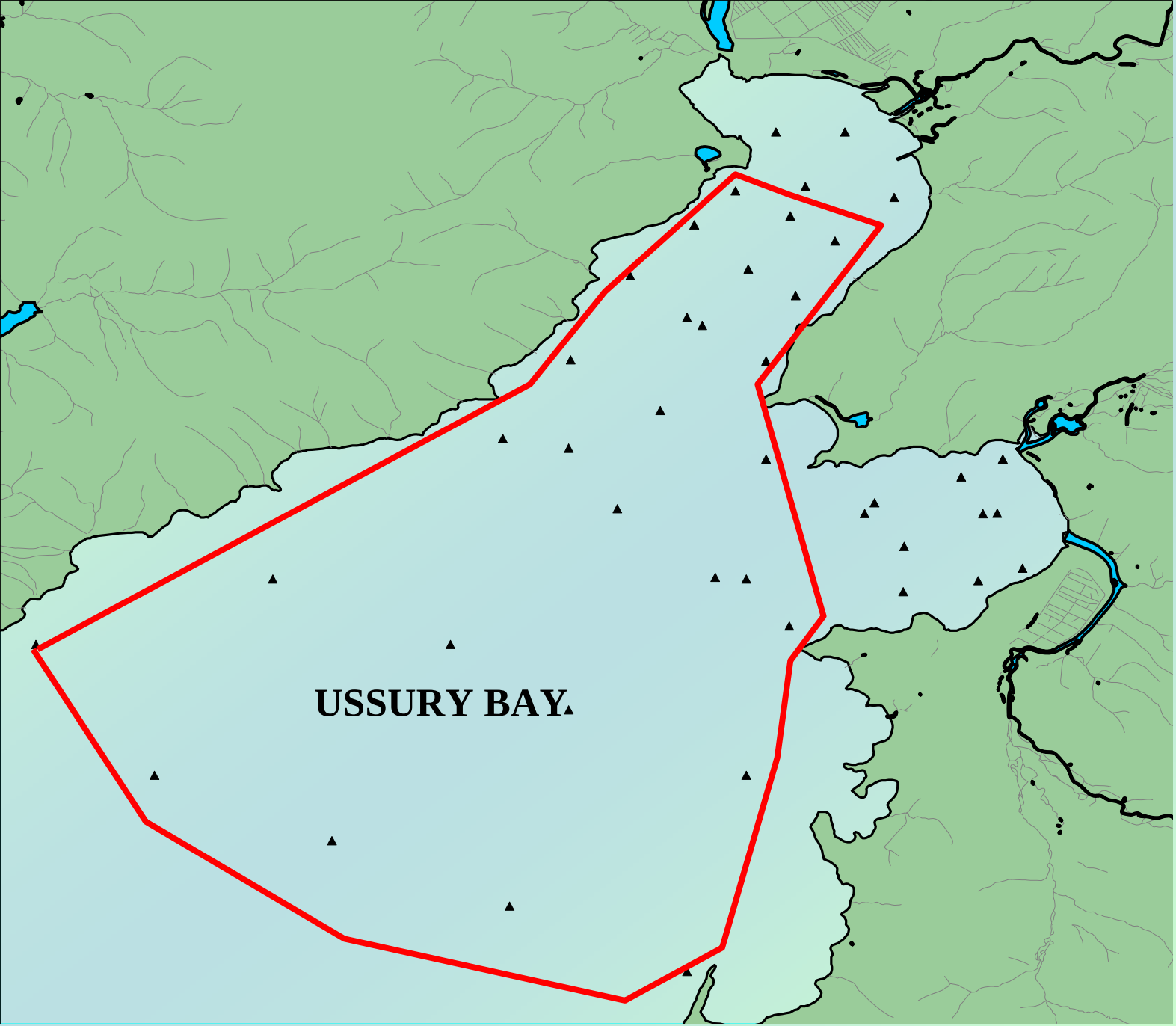
The purpose of the work

1. Analysis of the quantitative distribution of macrobenthos in the Ussury Bay and adjacent areas

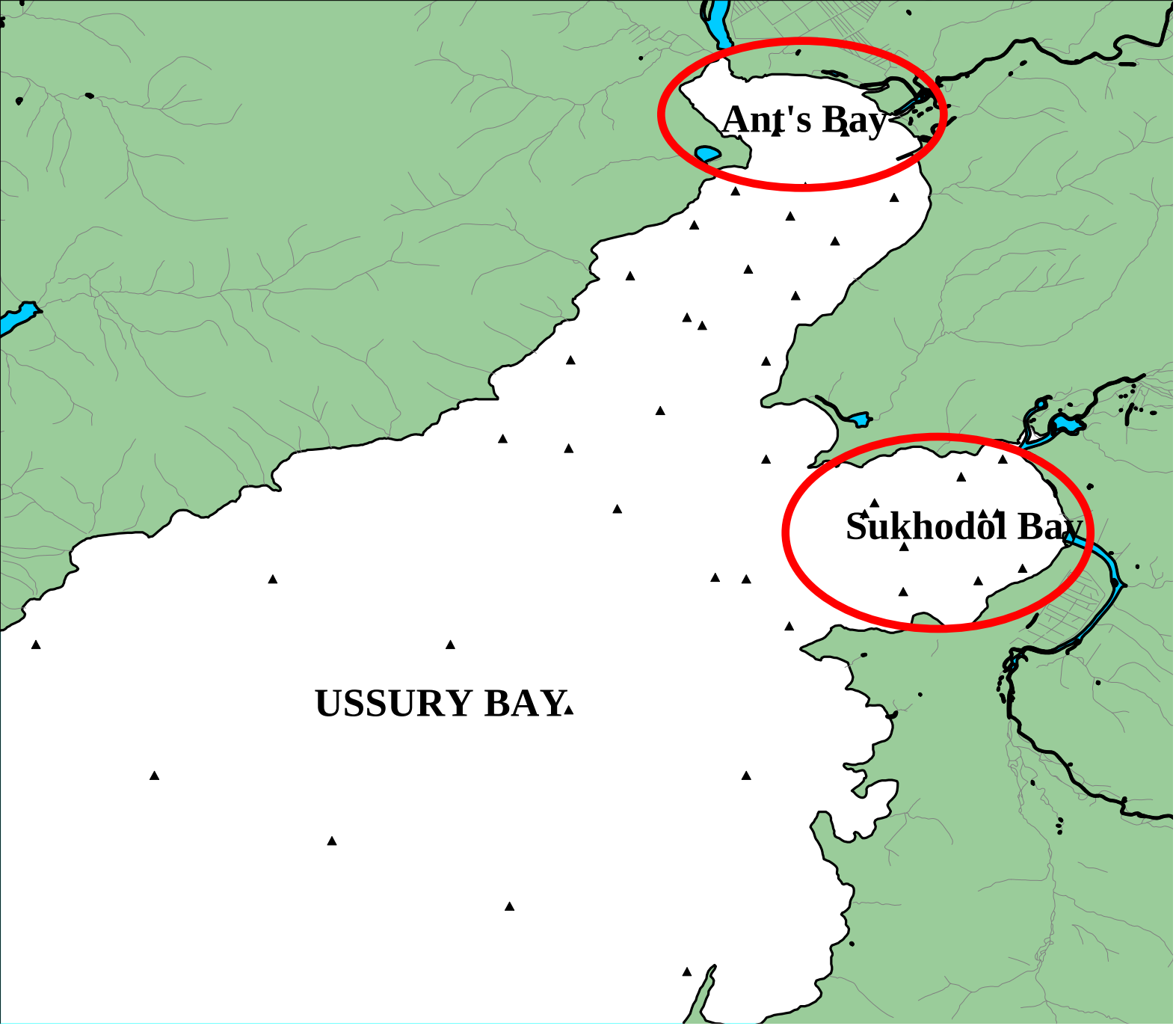
2. The investigation of the species composition of macrobenthos and the role of individual taxonomic groups and species in the total biomass

3. Separation of the benthic communities in the Ussury Bay

4. Comparison of the composition and quantitative characteristics of the marine and fresh water macrobenthos



area of research



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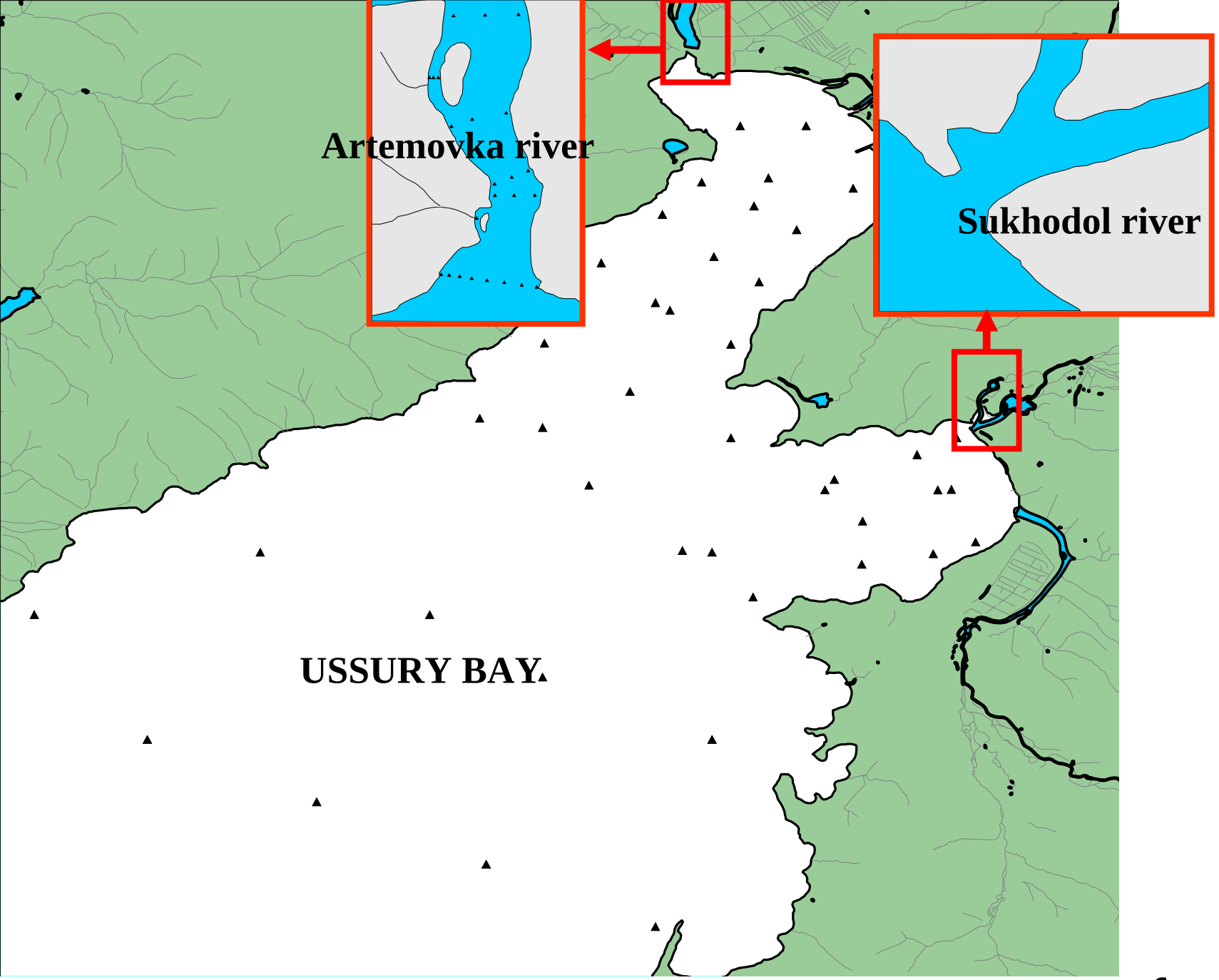

area of research

Distribution of total biomass and the ratio of the major groups of macrozoobenthos in Ussury Bay

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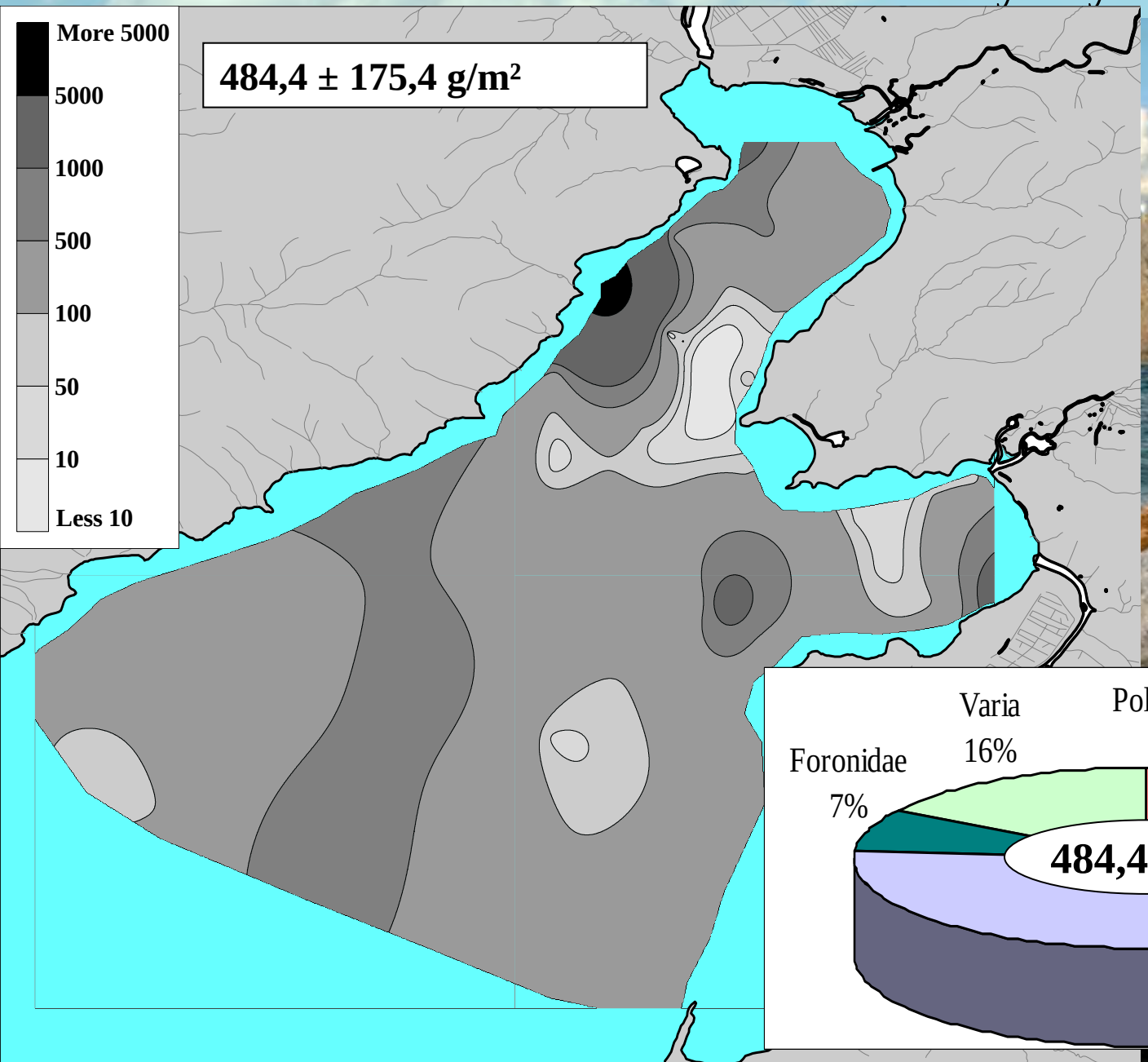
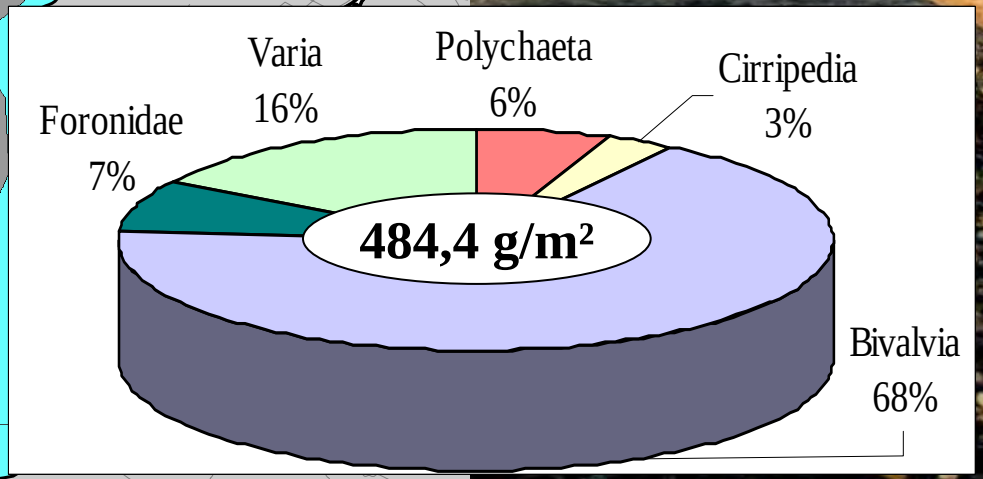
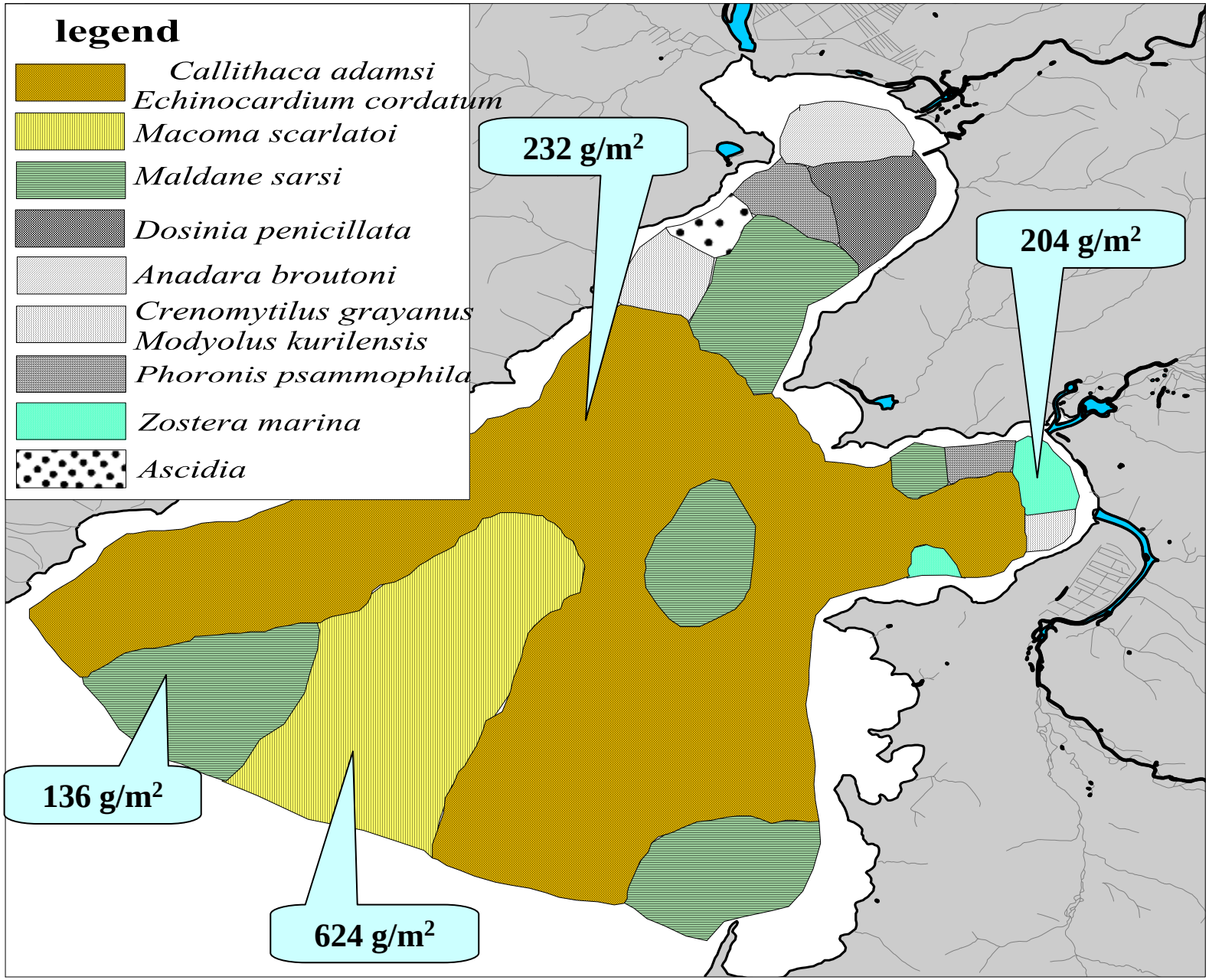
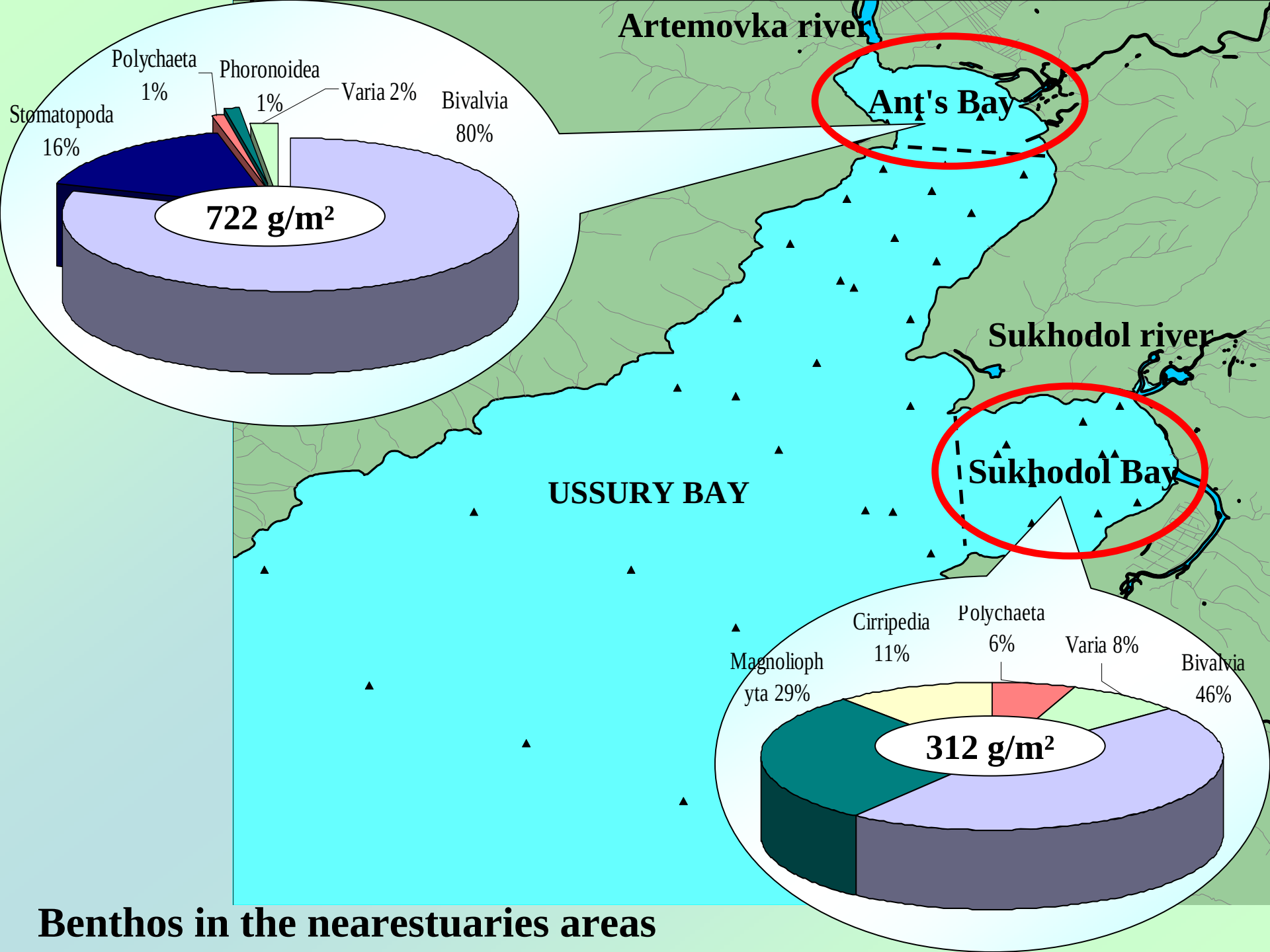




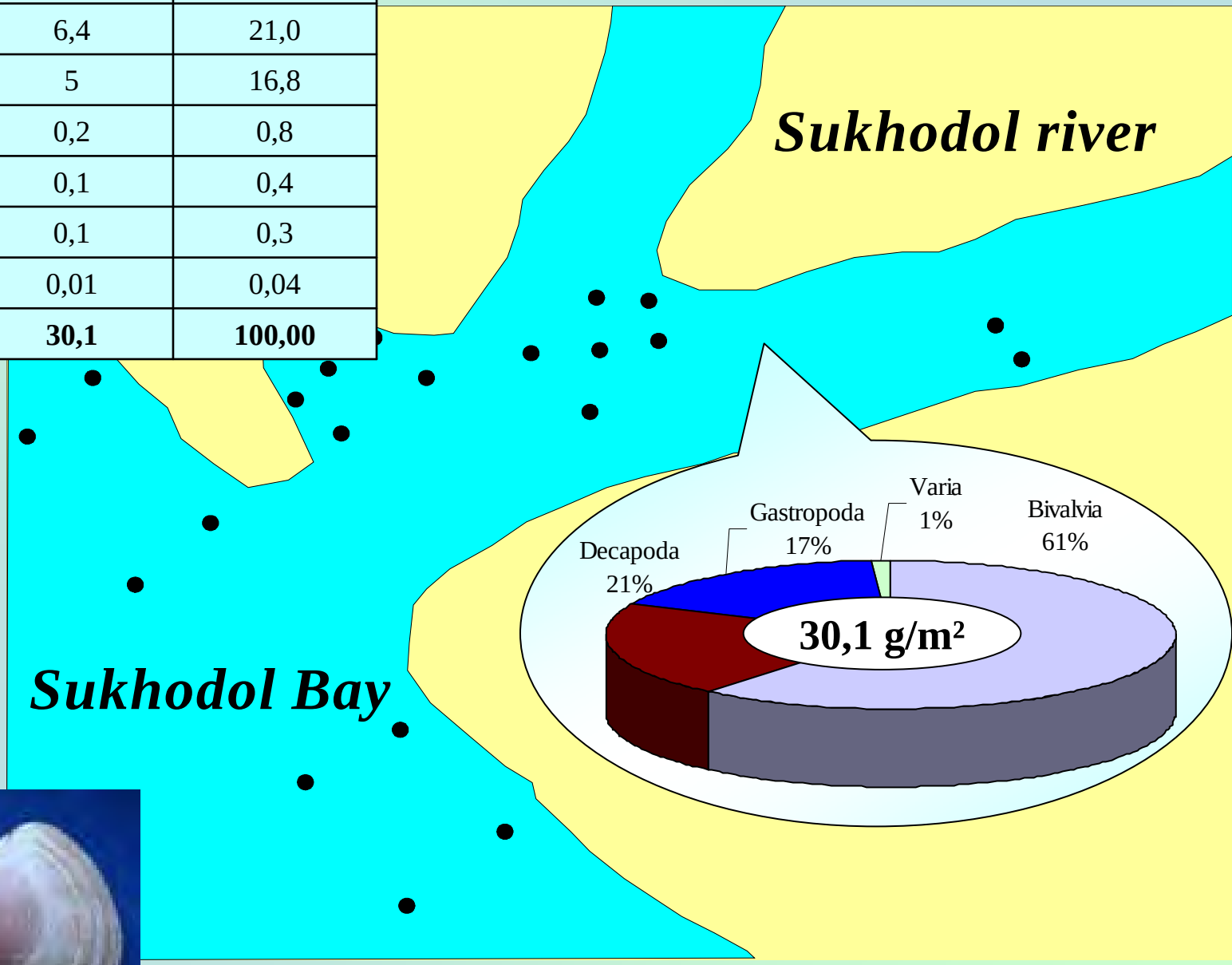
Benthic communities in the Ussury Bay





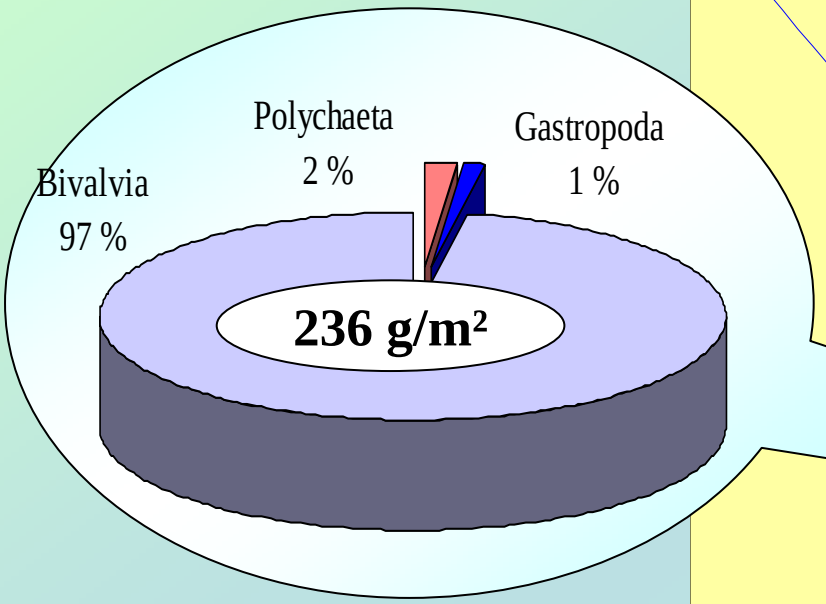
Benthos in the nearestuaries areas

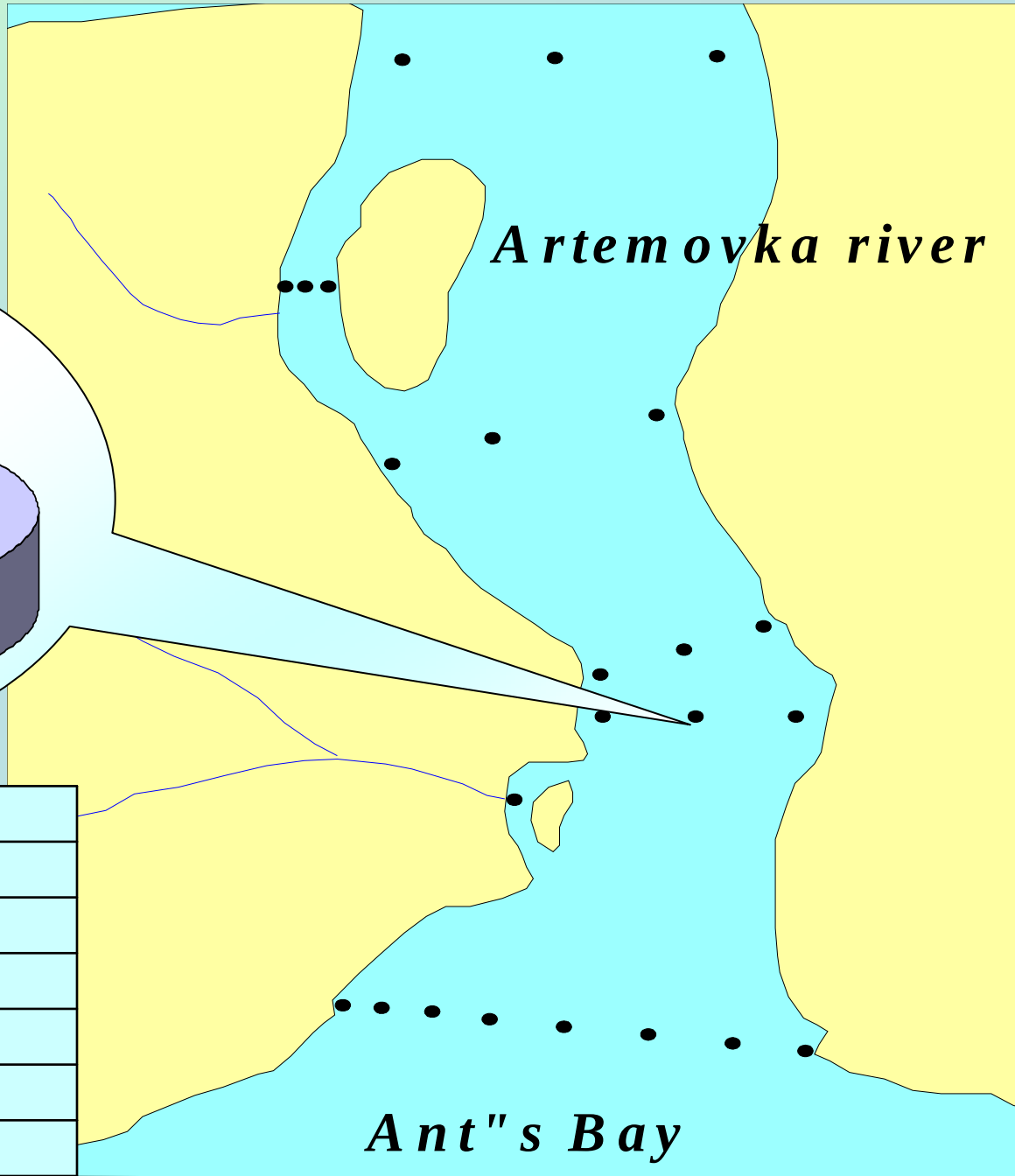
groups	g/m²	%
Bivalvia	18,2	60,6
Decapoda	6,4	21,0
Gastropoda	5	16,8
Polychaeta	0,2	0,8
Amphipoda	0,1	0,4
Varia	0,1	0,3
Insecta	0,01	0,04
all	**30,1**	**100,00**



Groups of macrobenthos in the Sukhodol river

Groups of macrobenthos in the Artemovka river





groups	g/m²	%
Bivalvia	228	97
Polychaeta	3,6	1,5
Gastropoda	3,0	1,2
Nemertini	0,6	0,2
Decapoda	0,2	0,1
all	**236**	100

The conclusions

1 * The average total biomass of macrozoobenthos in Ussury Bay was 484.4 g/m^2.

2 * The base of biomass of macrobenthos consists of bivalves, taking about 70% of the total biomass of the benthos. As the essential contribution to the general biomass was brought polychaetes, foronids, barnacles, seed plants and sea urchins.

3 * We selected 9 macrobenthic communities in the Ussury Bay. 5 of them were dominated by bivalves. The largest one is a community dominated by the bivalve *Callithaca adamsi* and heart urchin *Echinocardium cordatum*, occupying a large area.

4 * *Bivalvia* also was a dominated group of benthos in the nearestuaries sites. In Ant"s Bay they were presented by *Anadara brougthoni*, *Callitaca adamsi* and *Ruditapes philippinarum*. In the Suhodol Bay – by *Modiolus kurilensis*, *Dosinia angulosa*, *Callitaca adamsi* and *Anadara brougthoni*.

5 * The base of biomass in the rivers consists of bivalves too. They were presented by *Macoma balthica* in Suhodol river and by *Corbicula japonica* in Artemovka river.

6 * The value of the macrobenthos biomas increases in the mean direction from river to sea.