Geographic features of the distribution of bottom fluxes of nutrients (N, P, Si) in the frontal zone of the Ob River estuary

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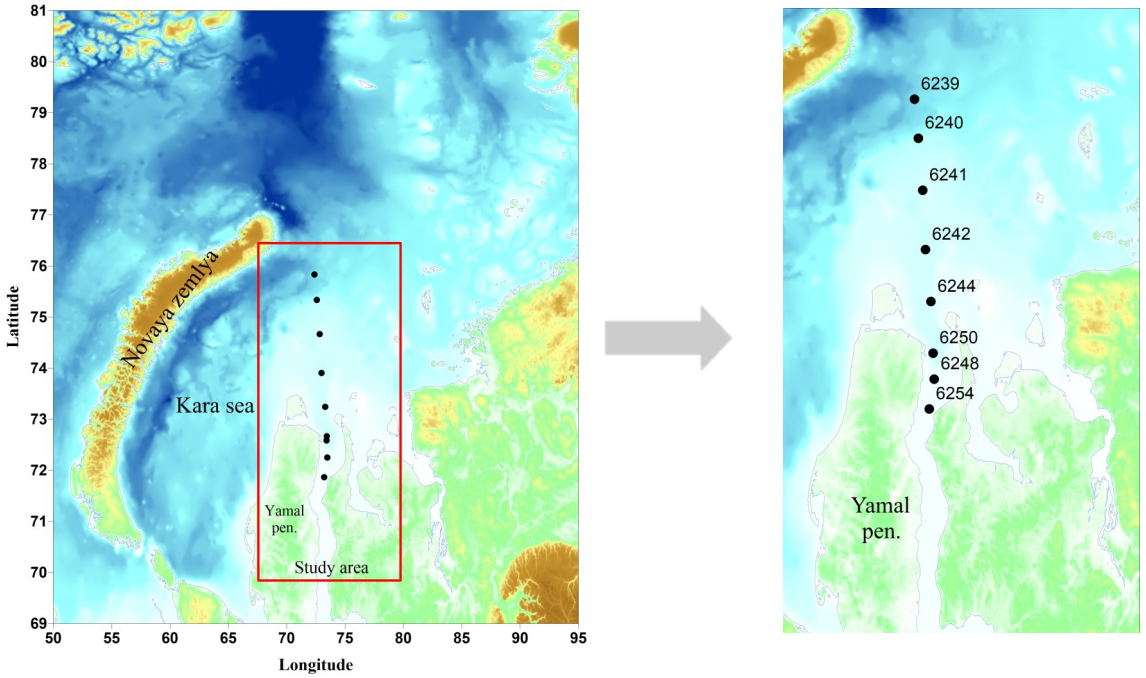
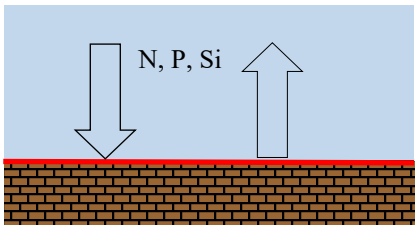
Study Area: Kara sea, Section in Obskaya Guba Bay (Ob estuary)

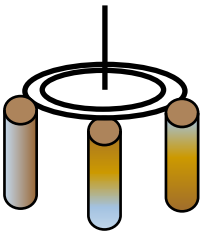


Study Object & Methods

Methodological process



Exchange of nutrients (N, P, Si) between bottom and water

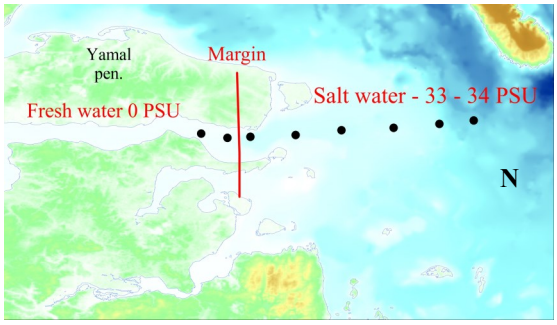


Multicorrer with sediment and bottom water

Separation: bottom water, sediment, interpore water

Chemical analysis of water
Total N, PO_4^{3-}, Inorganic Si
Estimation of benthic flows via 1st Fick`s law

Results



Mol/m^2*year	Fresh water	Margin	Salt water
N Flow	$3{,}02*10^{-1}$	$2{,}02*10^{-1}$	$3{,}26*10^{-1}$
P Flow	$4{,}12*10^{-3}$	$7{,}43*10^{-3}$	$1{,}53*10^{-3}$
Si Flow	$1{,}25*10^{-1}$	$2{,}22*10^{-1}$	$2{,}69*10^{-1}$

The mixing zone of fresh and salt water affects the flow of nutrients from the sediment; at this boundary, the flow of phosphorus from bottom sediments sharply increases (due to the capture of phosphorus by iron Fe(3+) on the marginal filter of the river), the silicon flow remains unchanged.

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