Toxic micro alga in Okhotsk Sea in Kamchatka shore

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KamchatNIRO

Mescheryakova, 1959

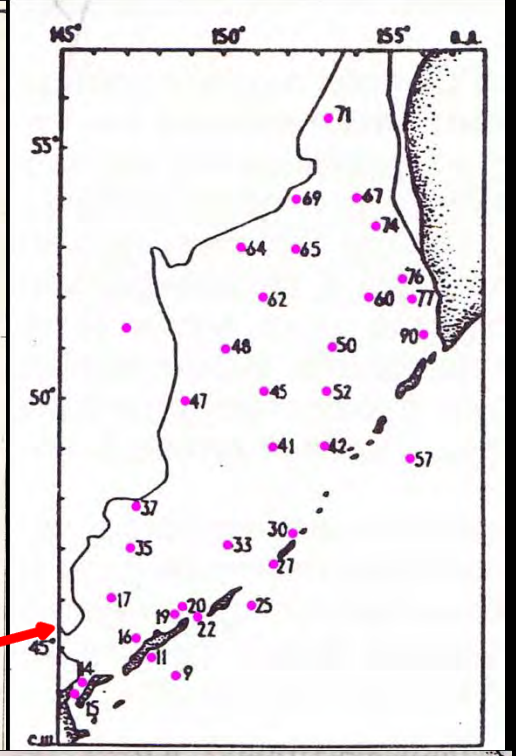
Ponomareva, 1956

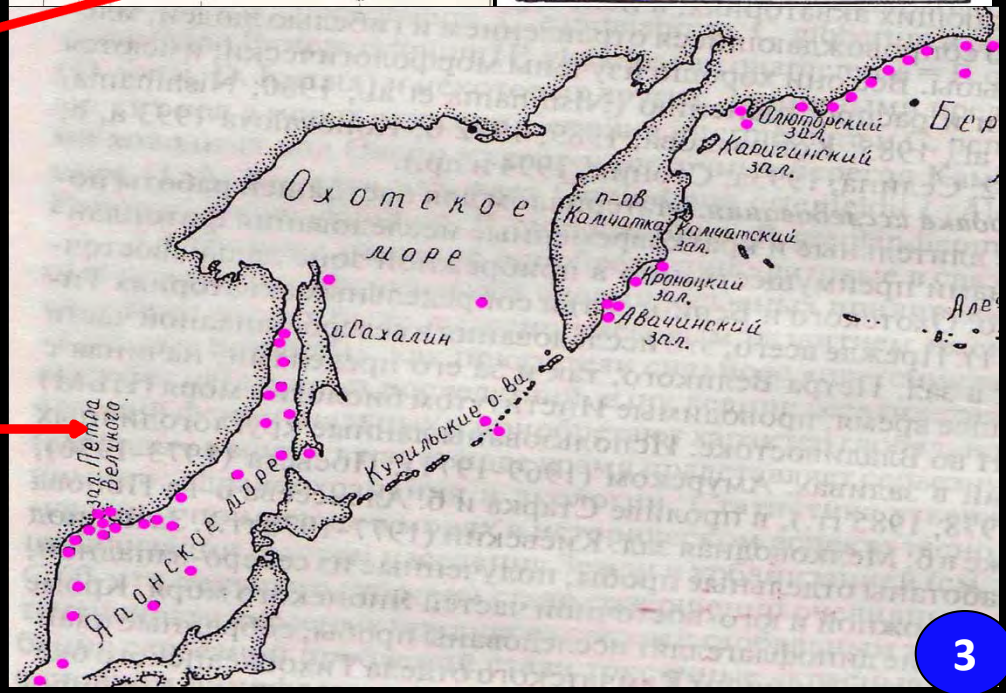
Smirnova, 1959 (***Nitzschia seriata*** Cl. ***Dinophysis acuminata, D. acuta, D. norvegica, Gonyaulax spinifera, Peridinium crassipes, Protoceratium reticulatum)***

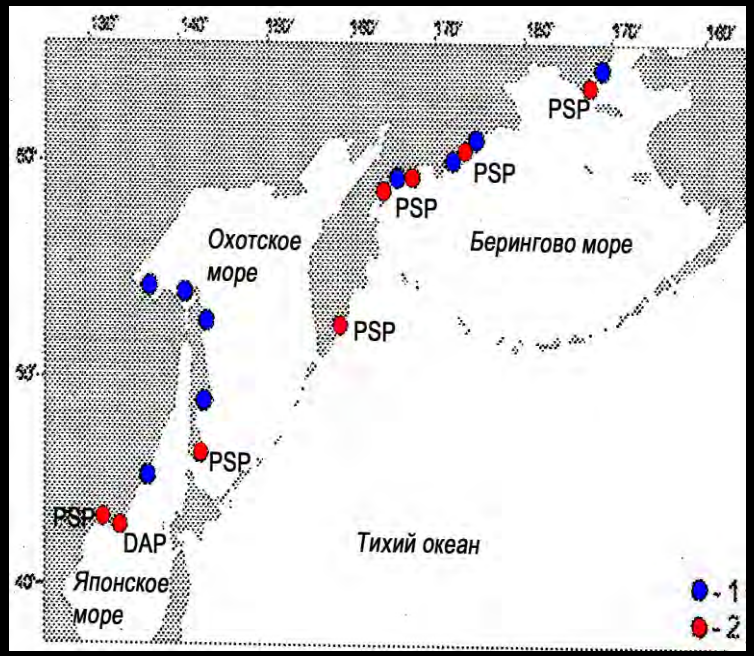
Kuzmina, 1962 (***Nitzschia seriata***)

Ventscel, 1997 (***Pseudonitzschia seriata, D. norvegica***)

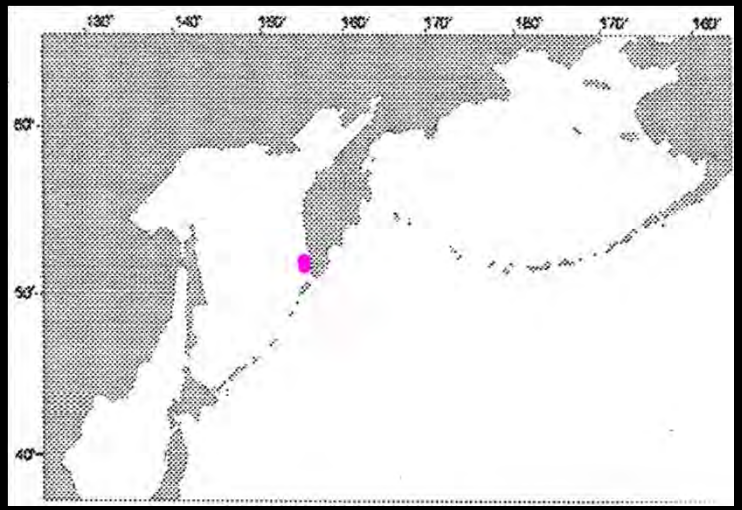
Konovalova, 1998 (***Alexandrium tamarense, Dinophysis acuminata, D. acuta, D. norvegica, Gonyaulax spinifera, Protoeridinium crassipes, Protoceratium reticulatum***



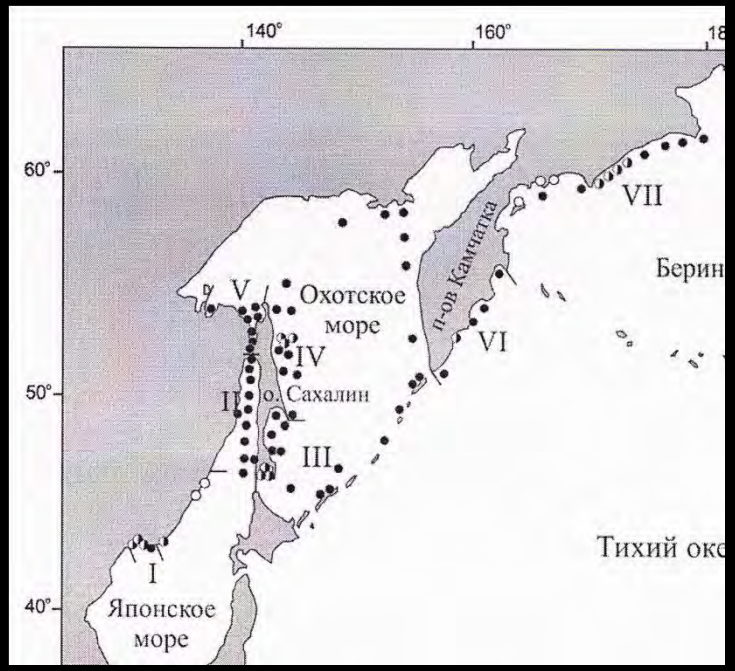


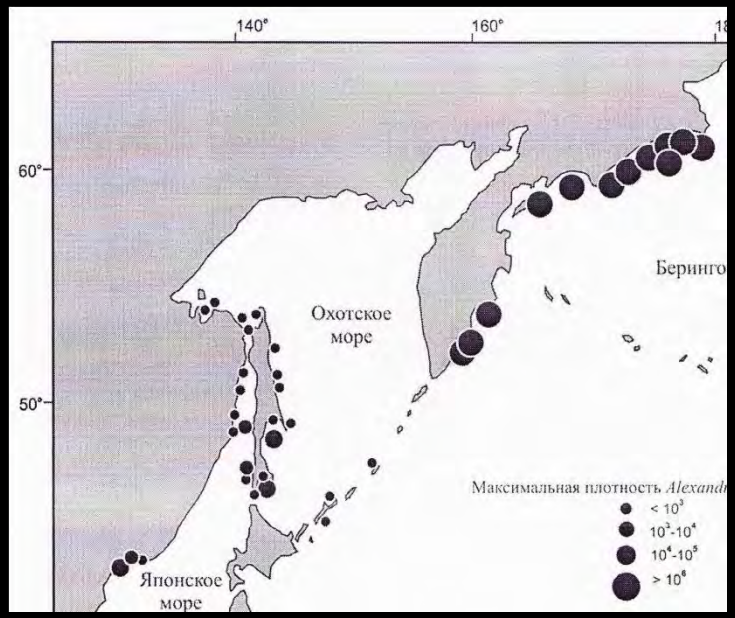


- **Orlova , 2005**



Lepskaya , 2008
(summer 2005, 2006)

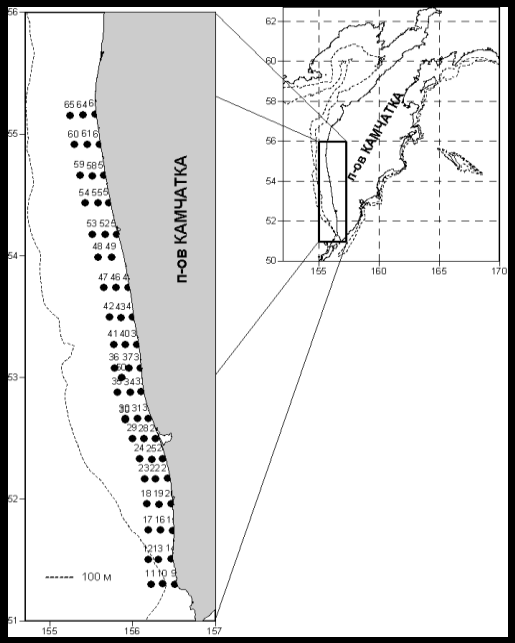


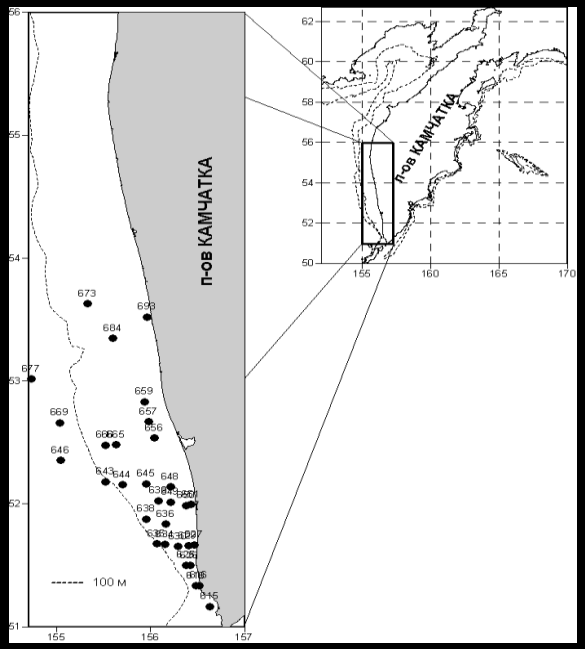


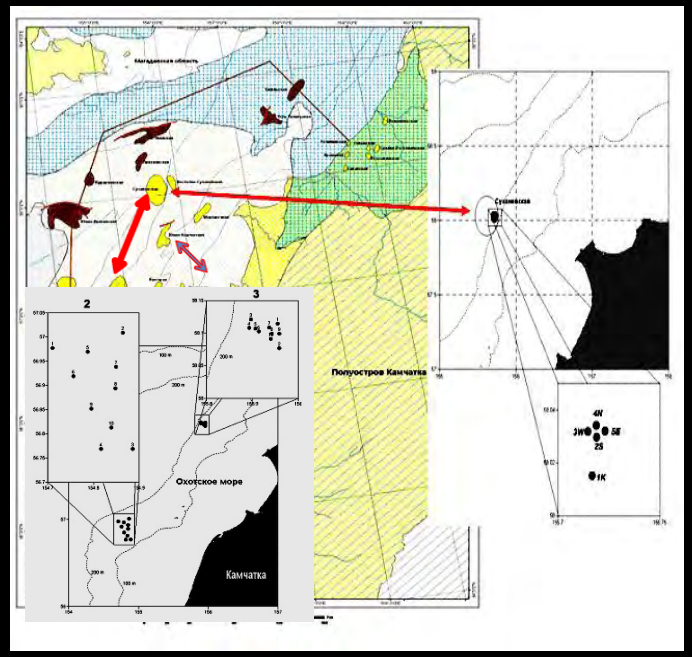
- **Selina et al., 2006**

The aim – summarize the own data for toxic micro algae in Okhotsk Sea in Kamchatka shore

Samples collected along west Kamchatka shore from 51 to 56 degrees before 200 m isobaths, and in West-Kamchatka shelf in spring and summer in 2004-2008, 2010

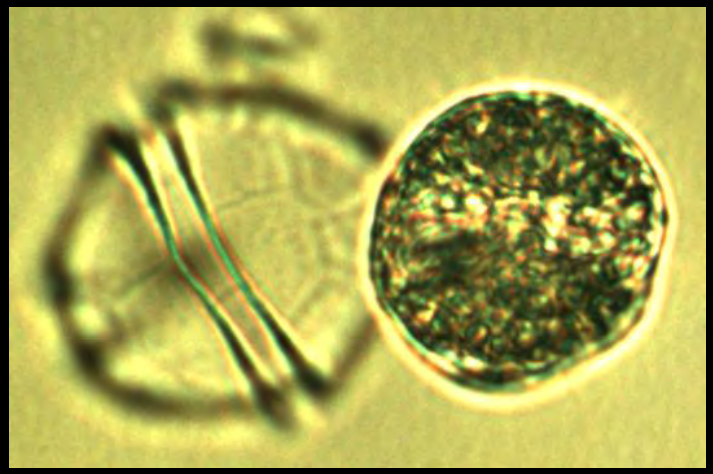


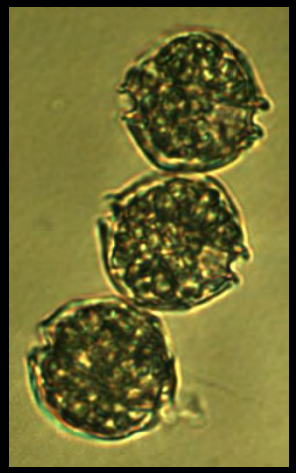




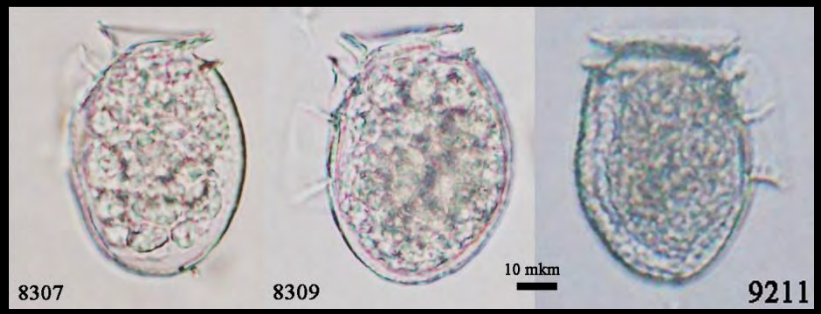
Three ways of samplings

1. From water surface by bucket – 186 samples
2. From different depths (usually surface, thermocline, and near-bottom) by bathometer – 152 samples
3. Juday plankton net with mash size 0,112 mm – 187 samples

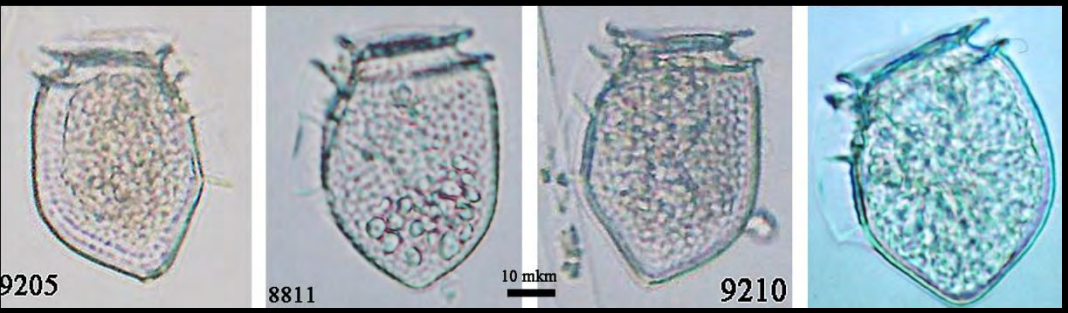




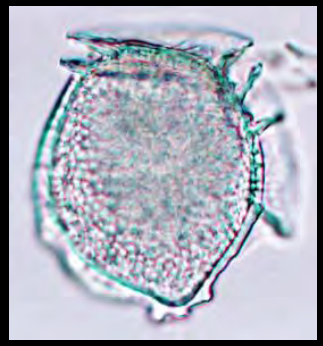
Alexandrium tamarense



Dinophysis acuminata



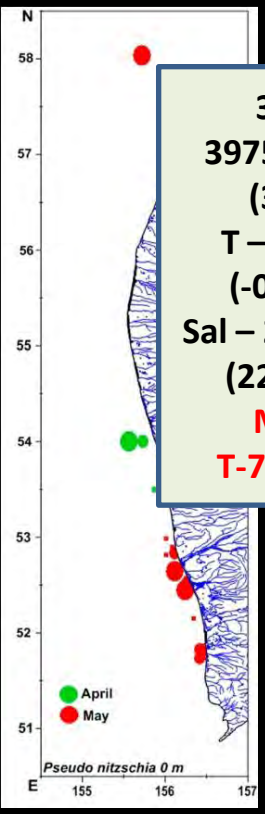
Dinophysis acuta

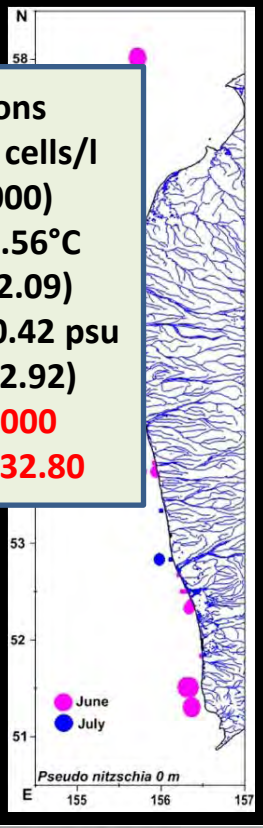


Dinophysis norvegica

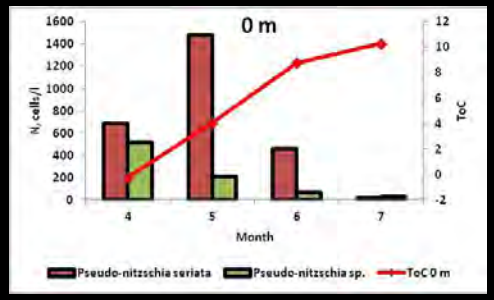
Pseudo-nitzschia cf. *seriata*

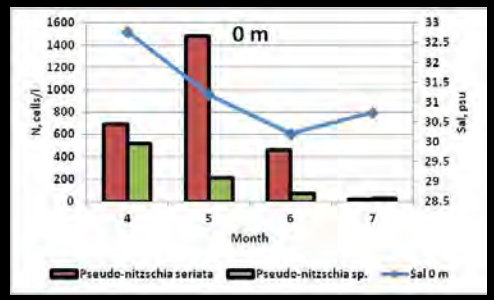
Pseudonitzschia seriata - complex



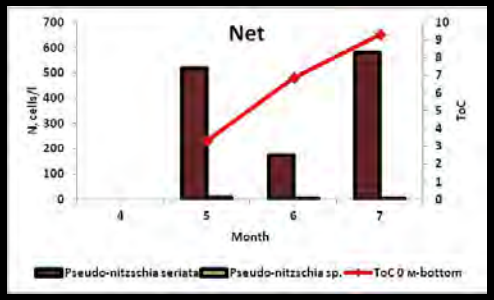


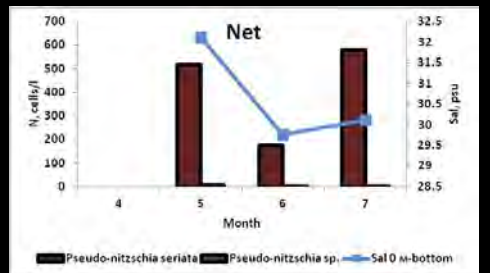
31 stations
3975±1011 cells/l
(38– 26000)
T – 5.83±0.56°C
(-0.87 – 12.09)
Sal – 22.25±0.42 psu
(22.25 – 32.92)
Max -26000
T-7.30,sal-32.80

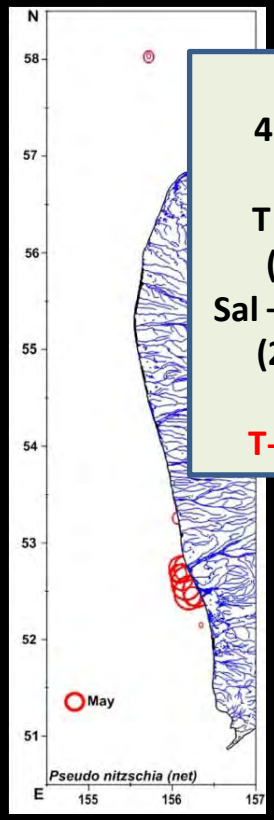


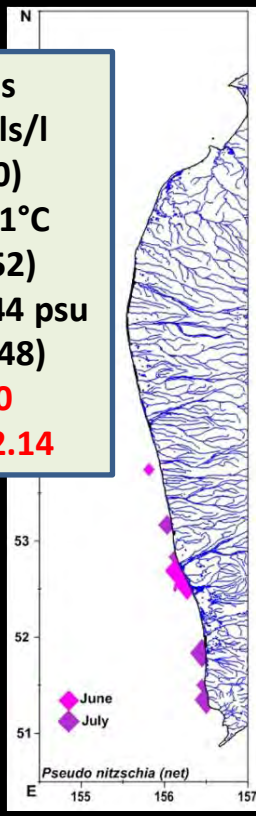


N-Sal0m R=0.38,
p<0.05, n=31

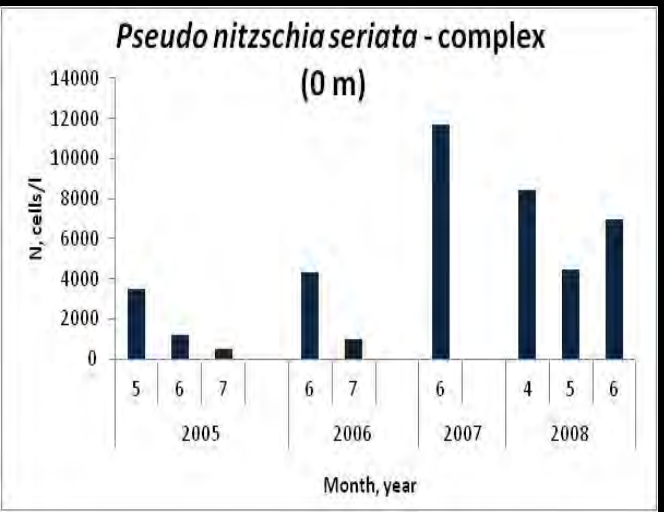


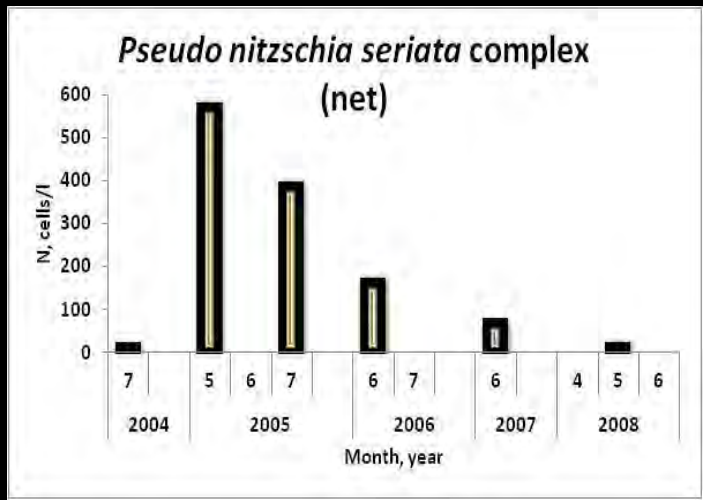






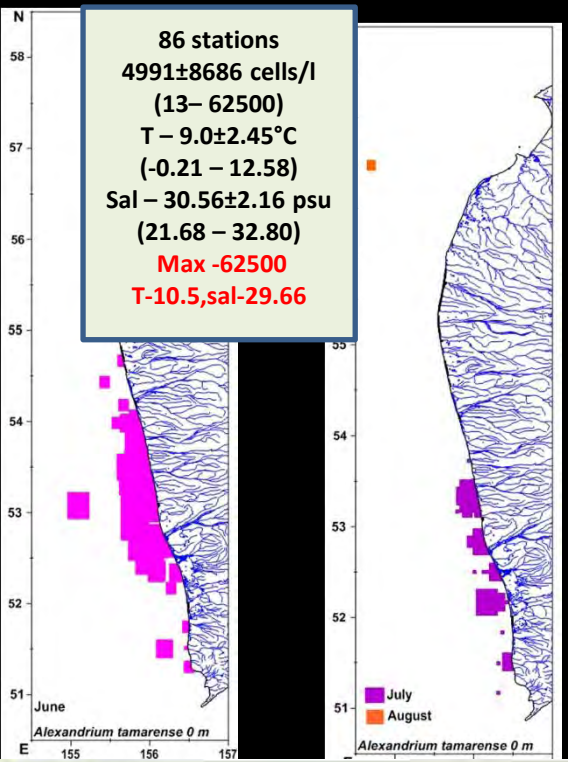
21 stations
414±163 cells/l
(0.2 – 2300)
T – 5.86±0.61°C
(2.61 – 11.52)
Sal – 32.14±0.44 psu
(25.97 – 33.48)
Max -2300
T-9.29,sal-32.14

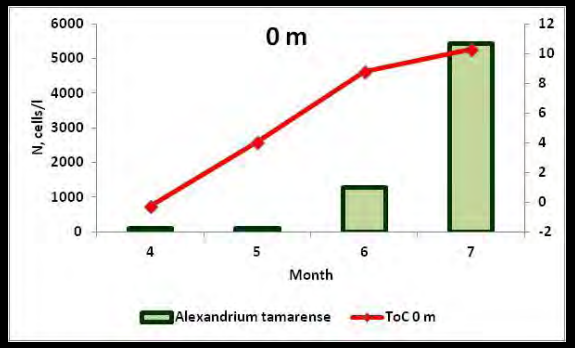


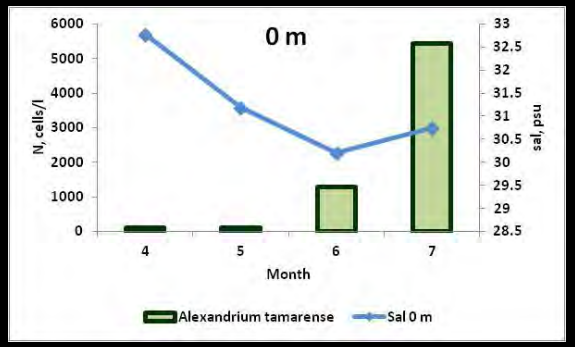


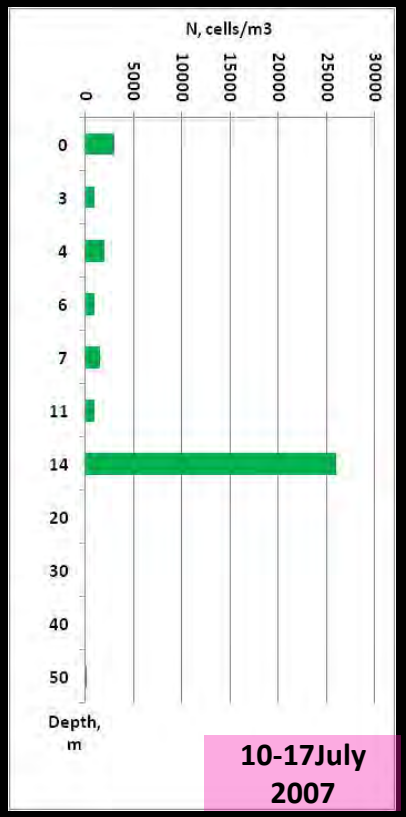
Alexandrium tamarense - complex

86 stations
4991±8686 cells/l
(13– 62500)
T – 9.0±2.45°C
(-0.21 – 12.58)
Sal – 30.56±2.16 psu
(21.68 – 32.80)
Max -62500
T-10.5,sal-29.66









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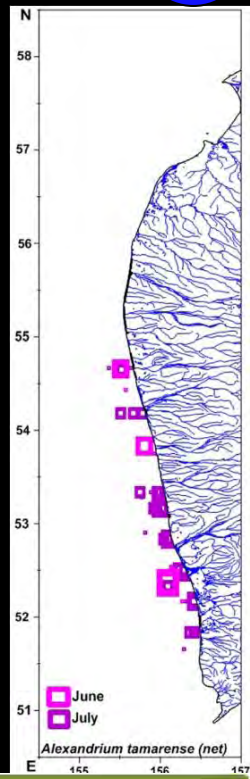
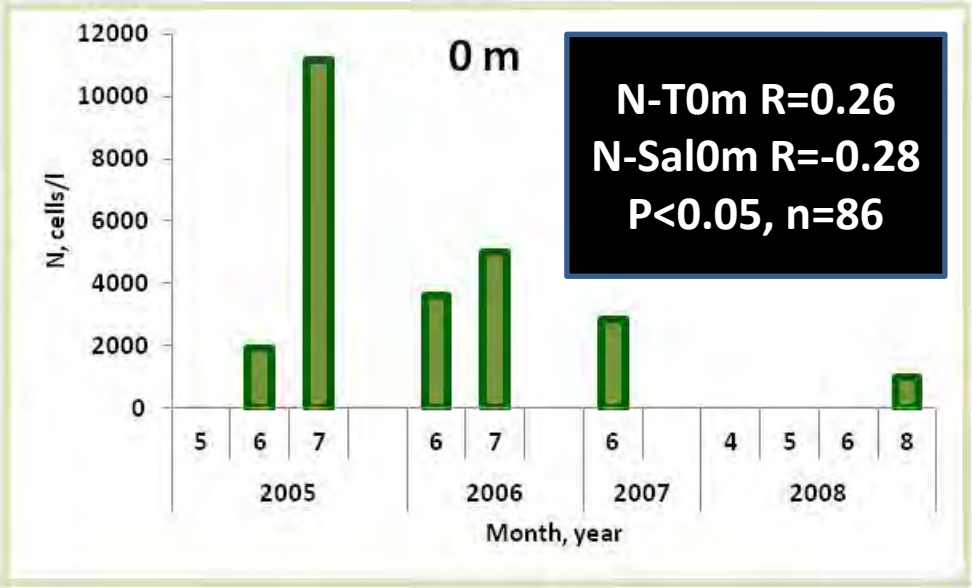
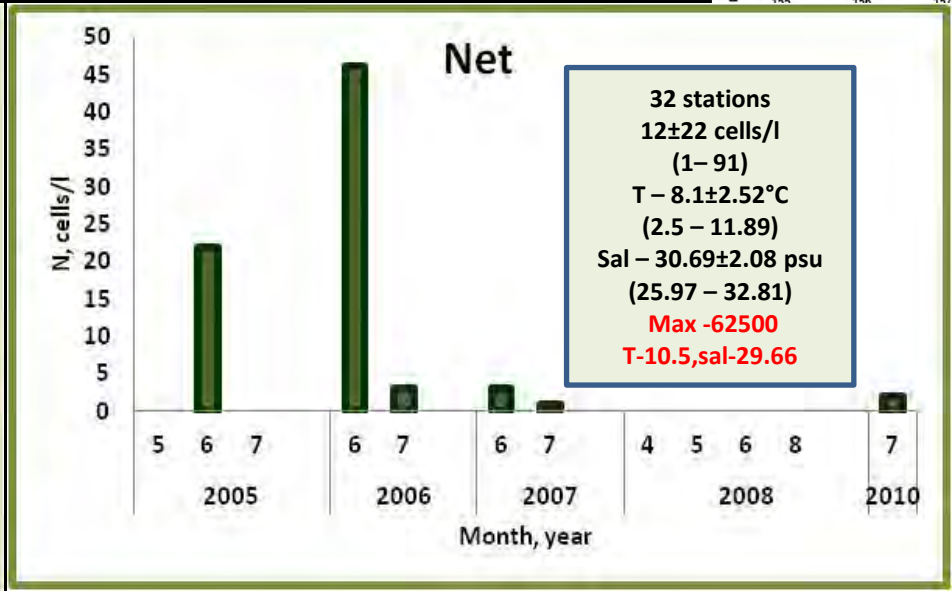


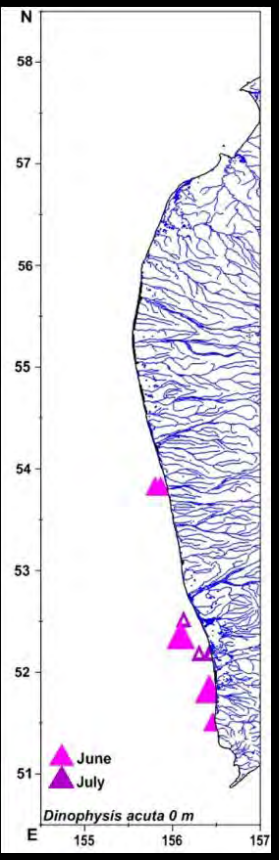


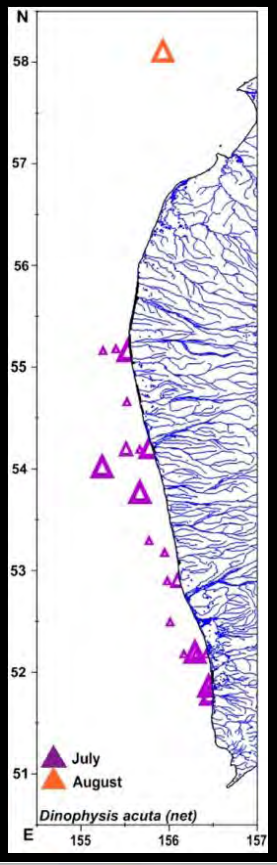
N-T0m R=0.26
N-Sal0m R=-0.28
P<0.05, n=86

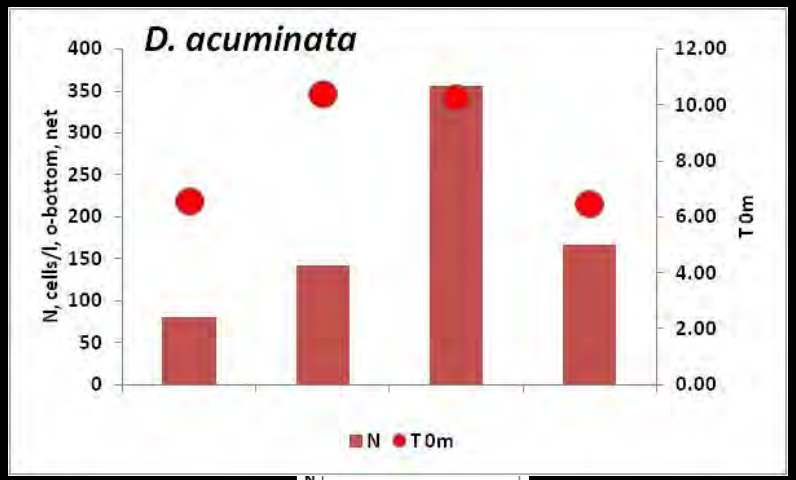


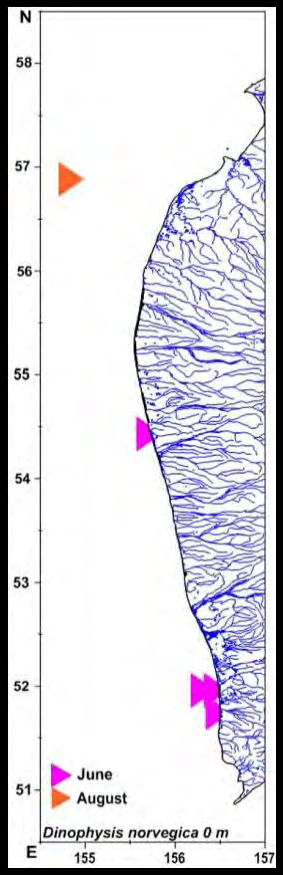
32 stations
12±22 cells/l
(1– 91)
T – 8.1±2.52°C
(2.5 – 11.89)
Sal – 30.69±2.08 psu
(25.97 – 32.81)
Max -62500
T-10.5,sal-29.66

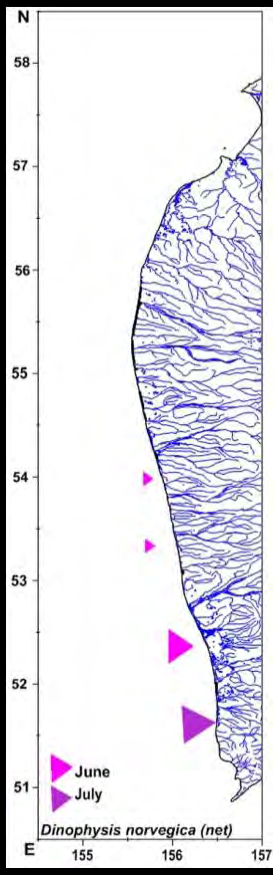
Dinophysis - complex

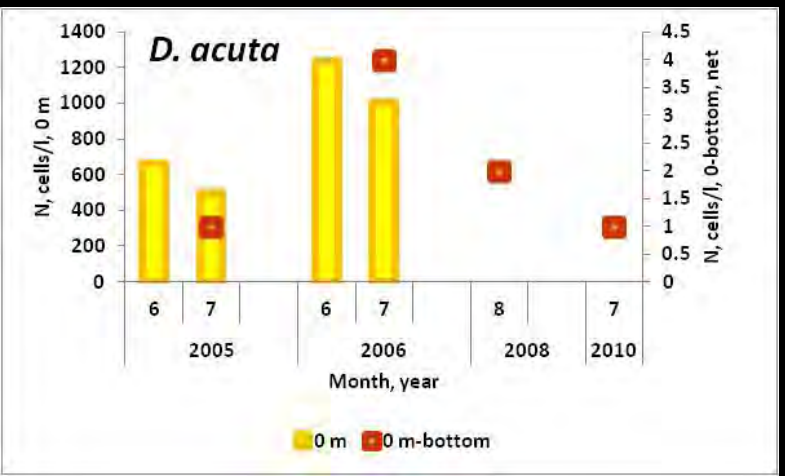


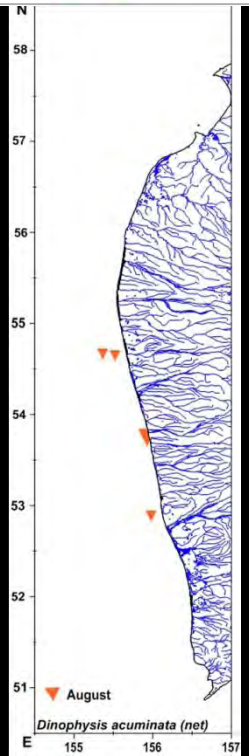


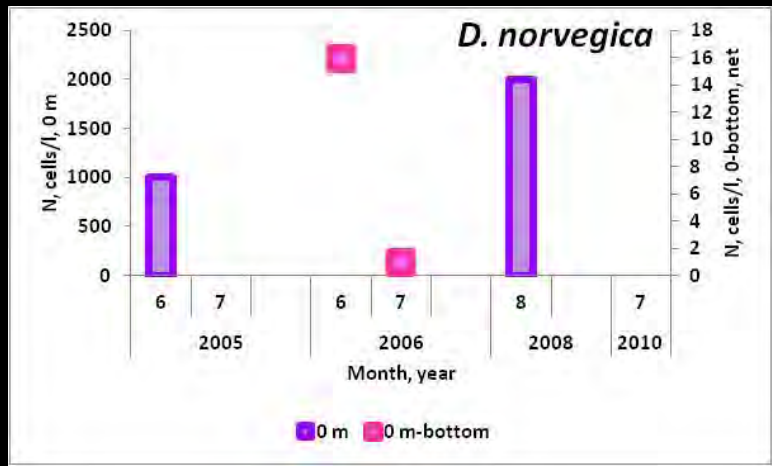




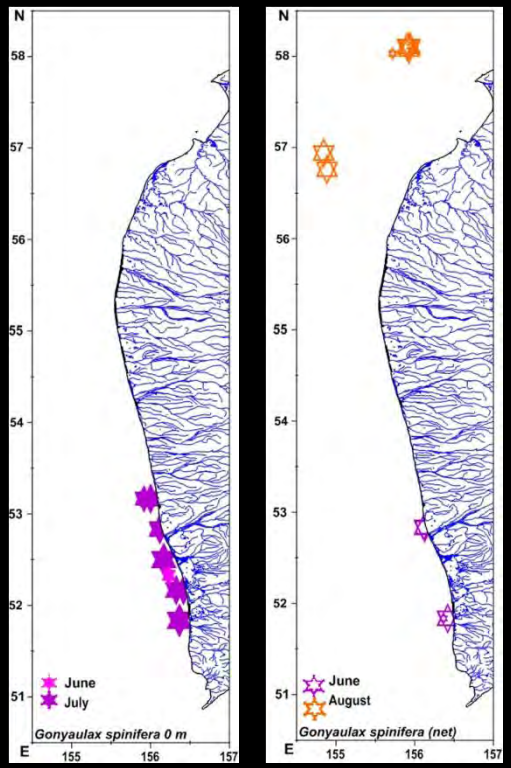


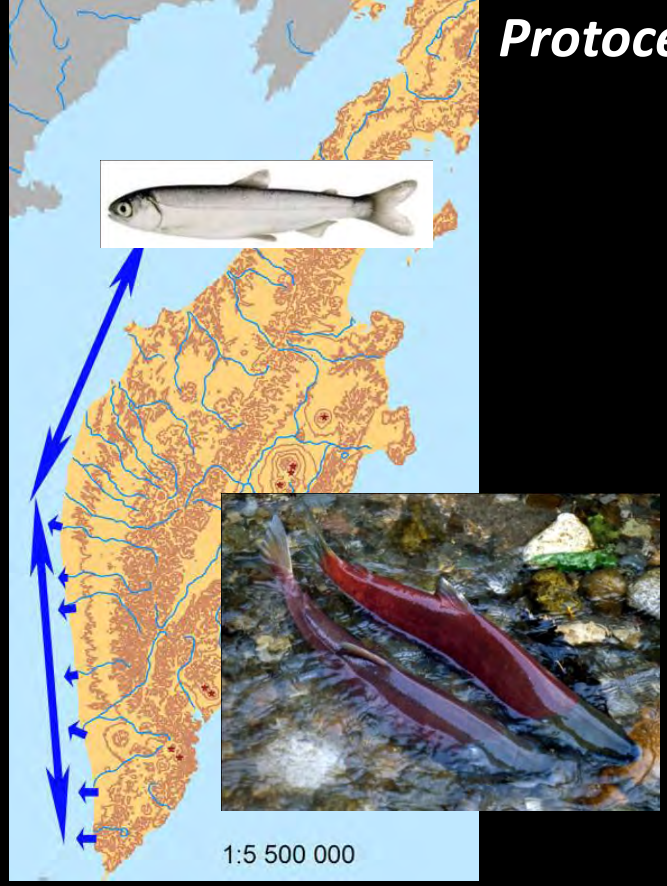




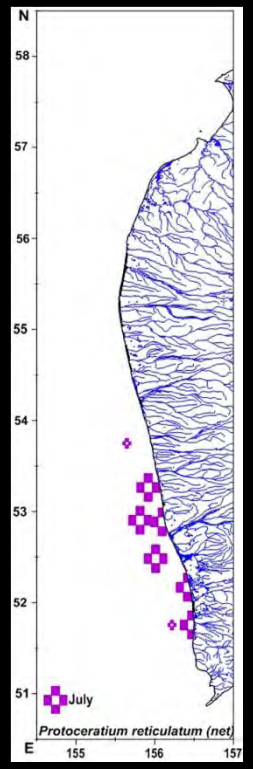


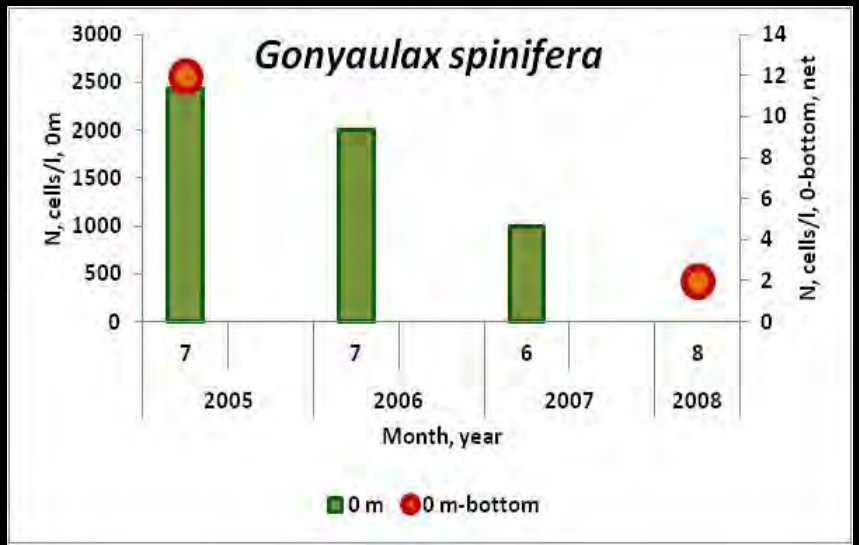
Gonyaulax spinifera

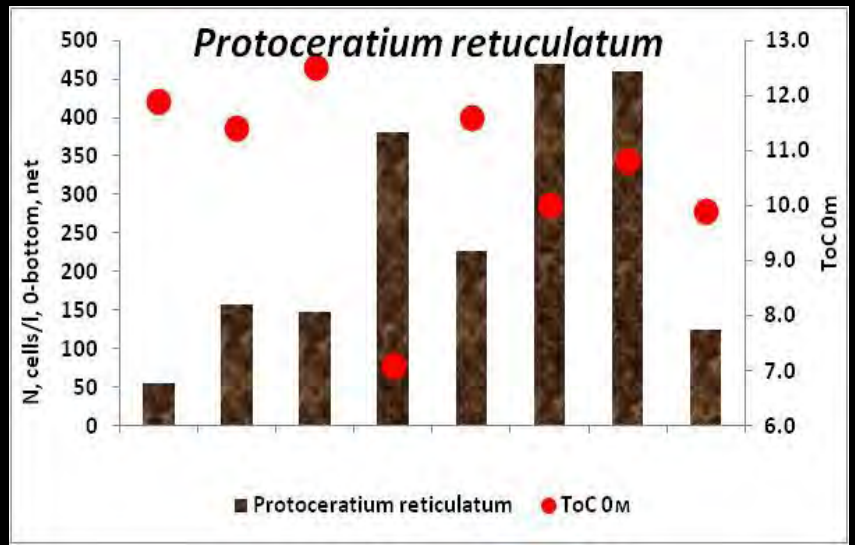




Protoceratium reticulatum







Summery:

But in the changing conditions, and first of all, in the observed worming it's necessary to know that toxic micro alga might achieve such numbers at Okhotsk sea coast of Kamchatka, which are the case for compulsory monitoring of toxins in marine products at the countries with highly developed mariculture.

Thanks to all, who selflessly collected samples of phytoplankton in Okhotsk Sea