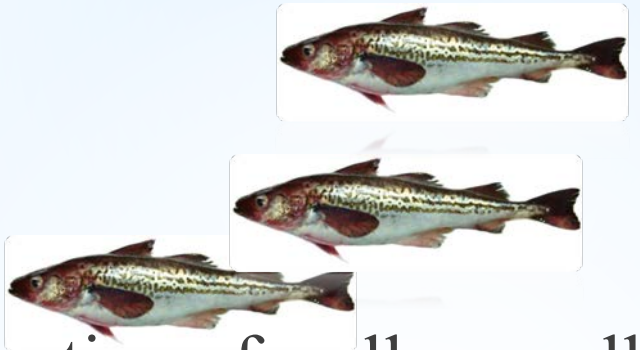
*S9 "Variability in **advection** and its biological consequences for Subarctic and Arctic ecosystems"*



Reproduction of walleye pollock and some oceanographic parameters of their habitat off the eastern Sakhalin Island, Sea of Okhotsk

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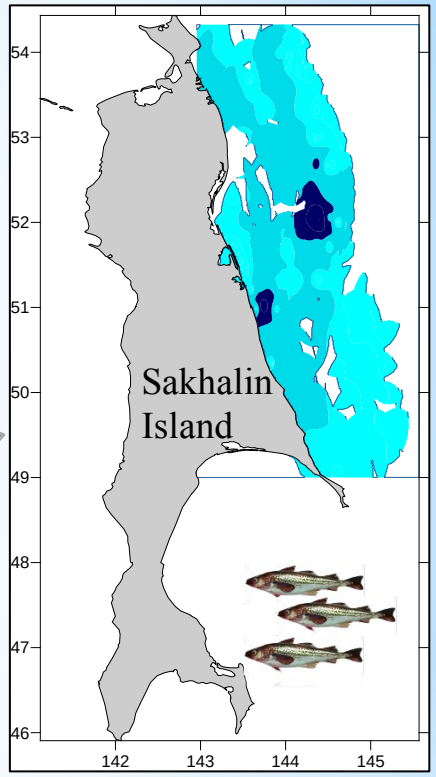
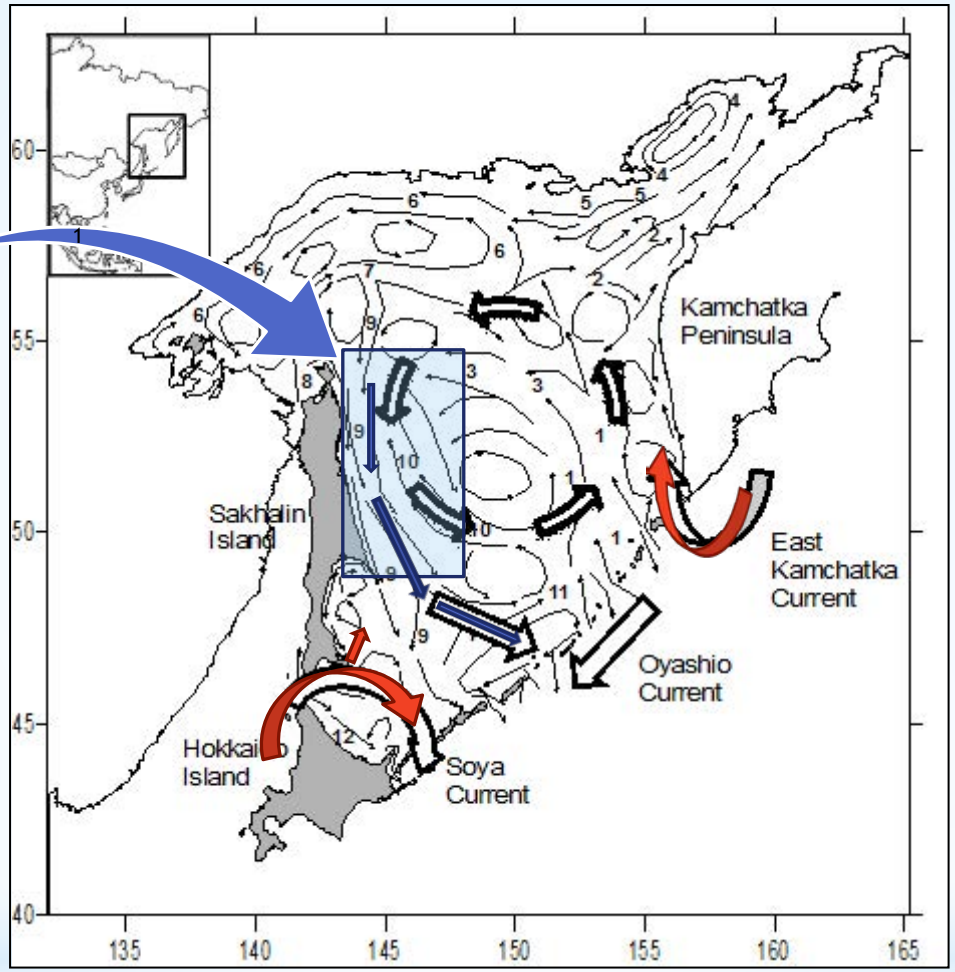
* Highlight the features of walleye pollock reproduction on the background of overall spring water dynamics nearly northeastern coast of Sakhalin Island (Sea of Okhotsk)



* Main goal

Studied area – north-eastern Sakhalin Island waters



Cold East-Sakhalin current

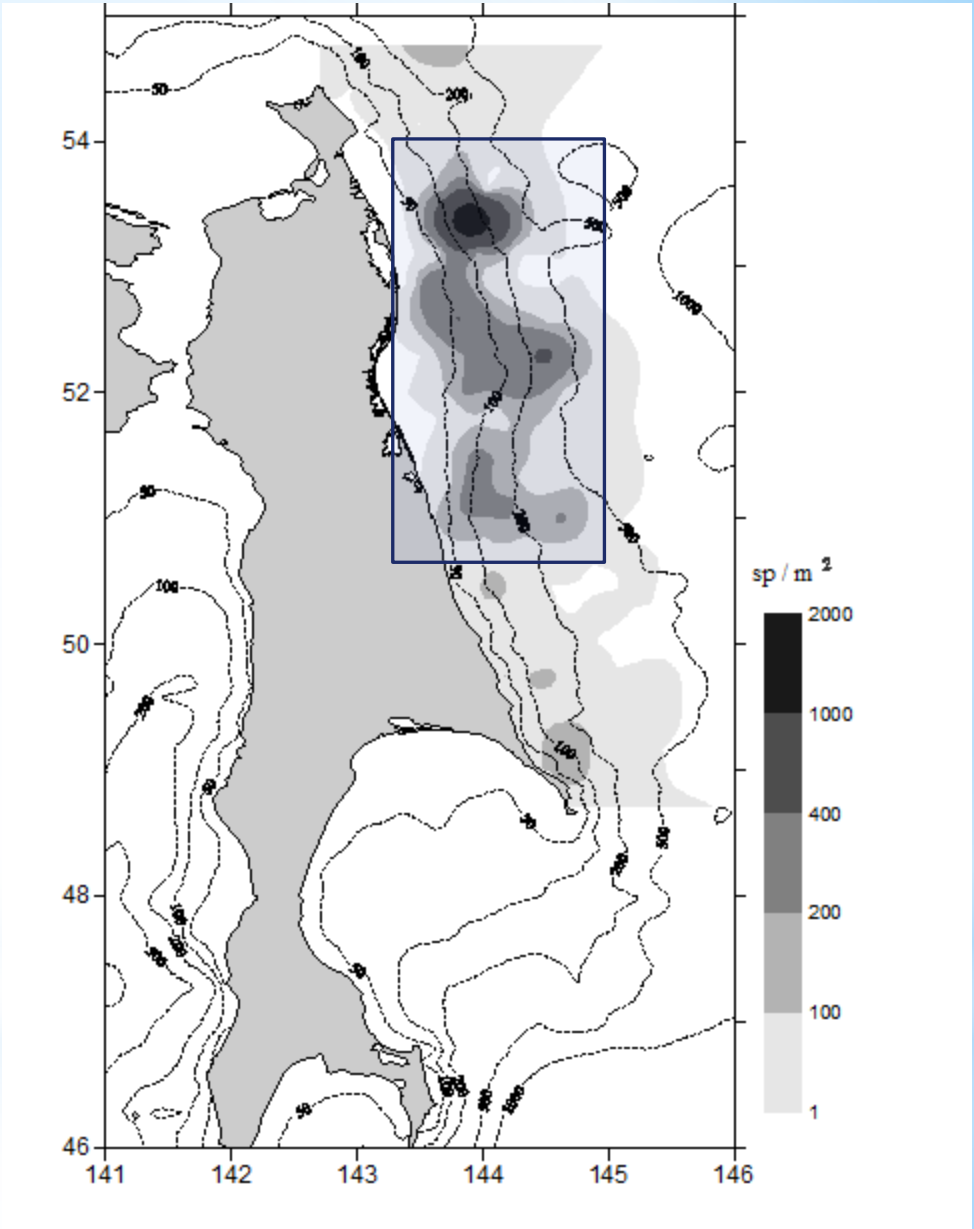
Warm East-Kamchatka Current,
Warm Soya current

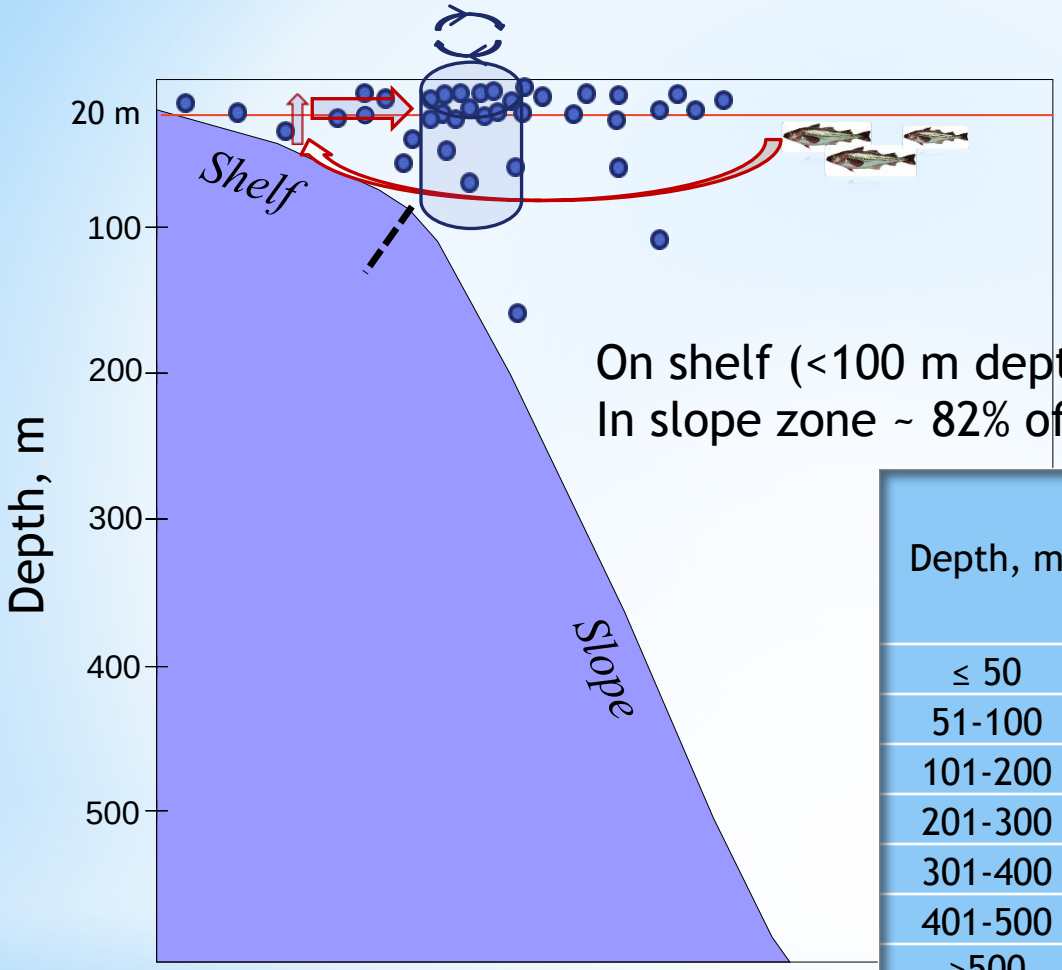
What we know about currents and walleye pollock spawning sites (features and associations) in the area?

* Currents system in the Sea of Okhotsk

* The ichthyoplankton survey, trawlings and oceanographic transects (I-VIII) at north-eastern Sakhalin Island in June 2012

* Spatial distribution of walleye pollock eggs at northeastern Sakhalin Island in June 2012





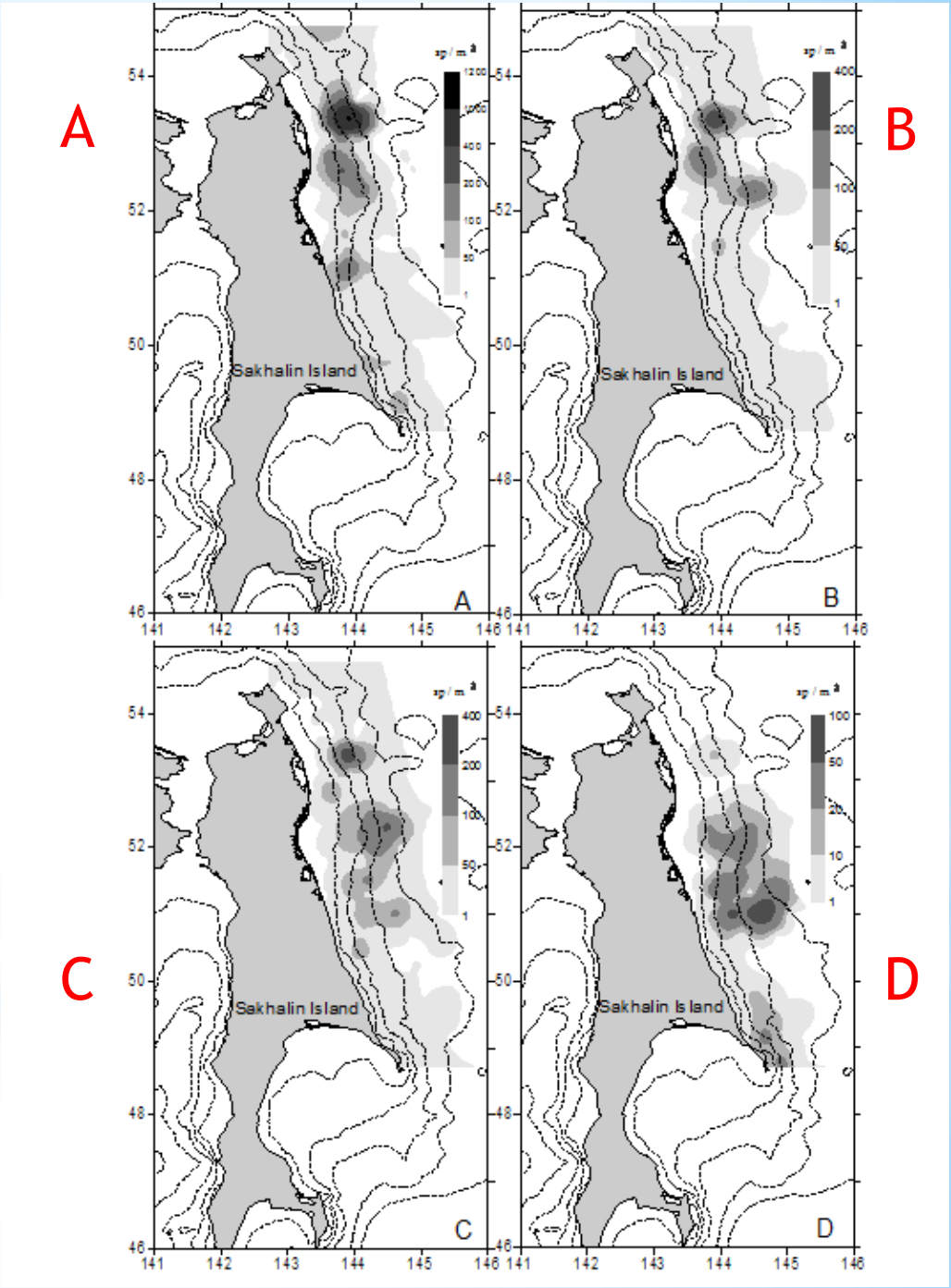
On shelf (<100 m depth) ~ 52% of eggs over thermocline
In slope zone ~ 82% of eggs over thermocline

Depth, m	Mean number of all eggs,	On the stage				Number of stations
		I	II	III	IV	
≤ 50	53,6	25	16	12	0,7	14
51-100	125,6	57	32	29	7,5	26
101-200	163,9	73	31	48	13	30
201-300	76,4	2,9	24	38	12	11
301-400	10	1,3	1,3	6,7	0,7	3
401-500	12,4	0	0,8	9,6	2	5
>500	34,9	4,4	9,8	17	3,6	17
		40%	23%	30%	7%	100%

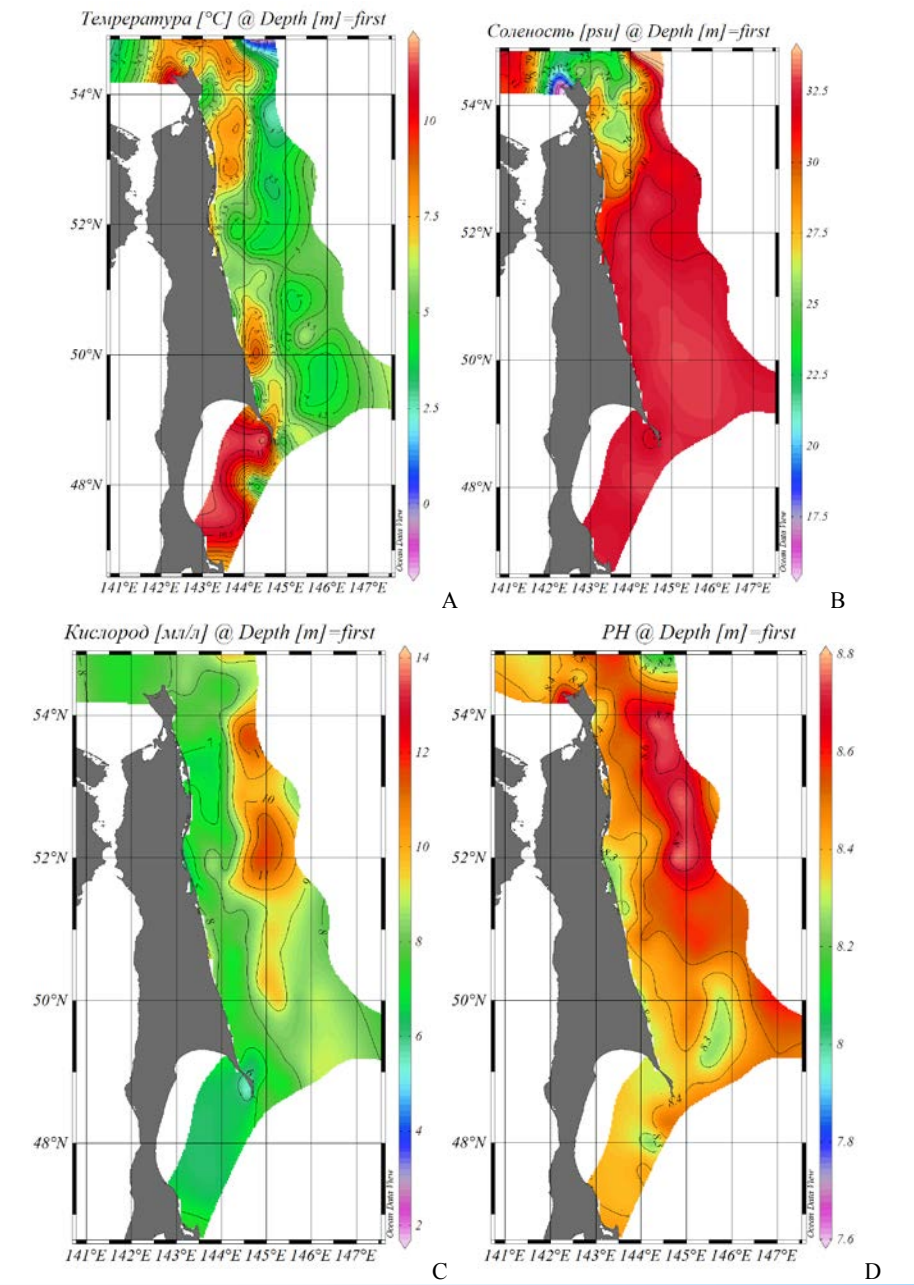
* Spatial distribution of eggs in vertical profile

* The distribution of walleye pollock eggs in different life stages at northeastern Sakhalin Island in June 2012,

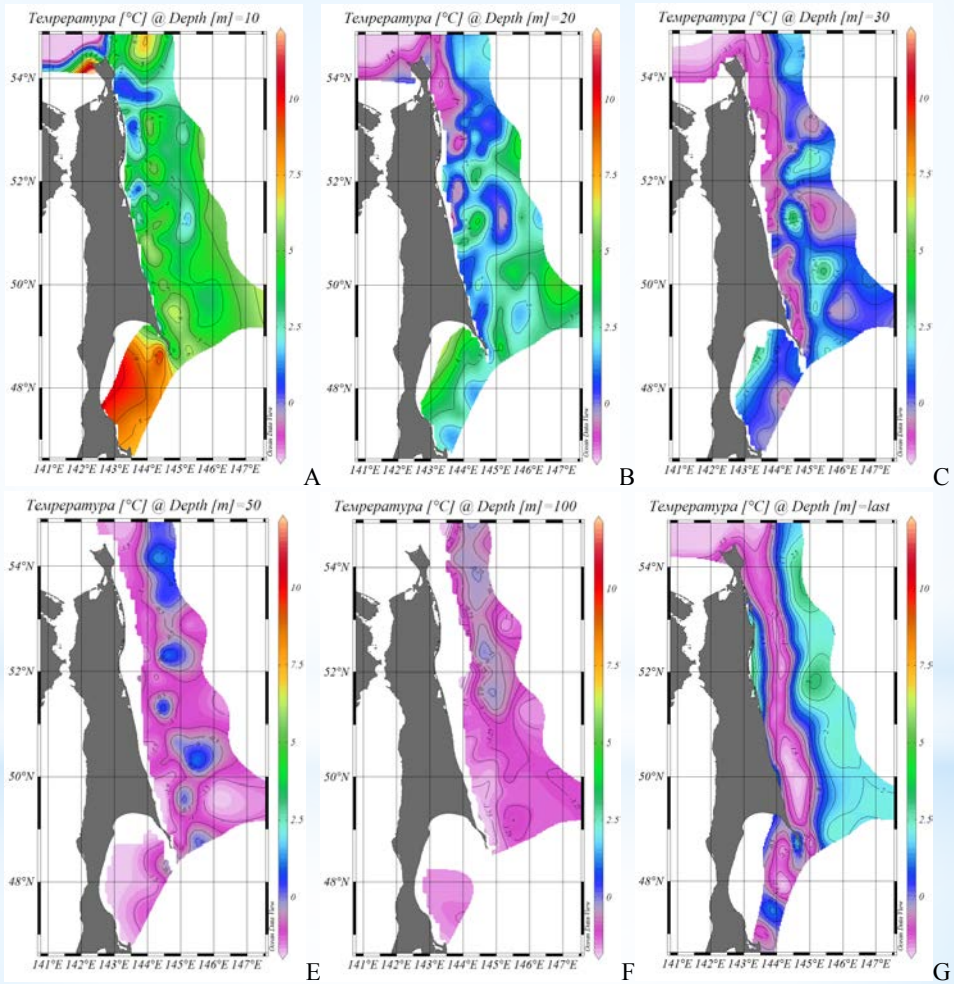
A - I,
B - II,
C - III,
D - IV stage

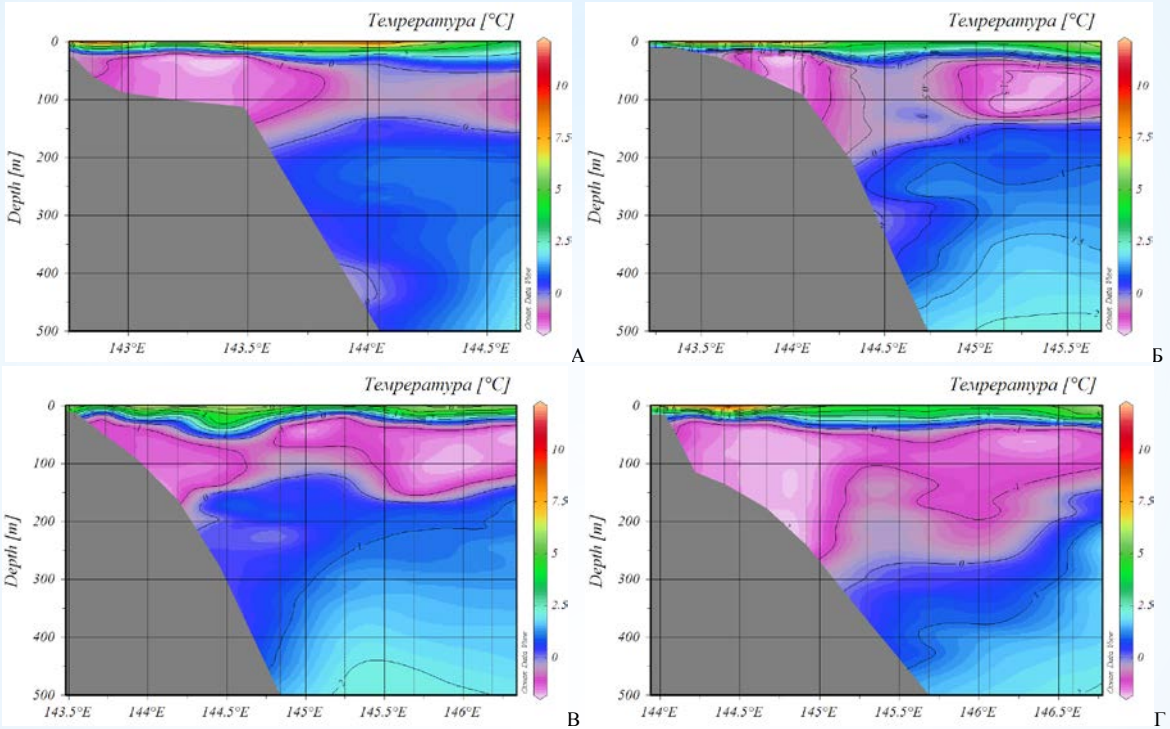


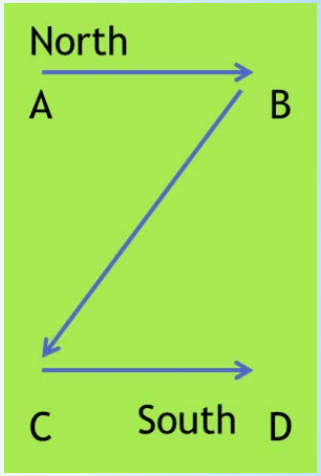
* Horizontal distribution of temperature (A), salinity (B), dissolved oxygen (C), and pH (D) in surface water of the sea



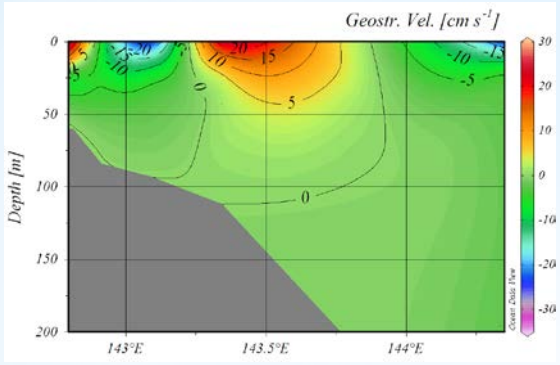
* The distribution of sea water temperature on horizons 10 m (A), 20 m (B), 30 m (C), 50 m (E), 100 m (F), near bottom and 500 m (G)



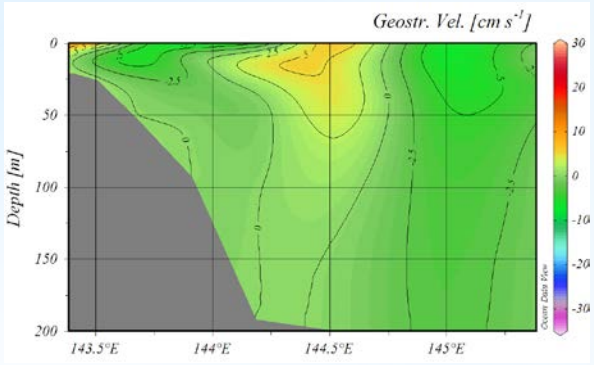




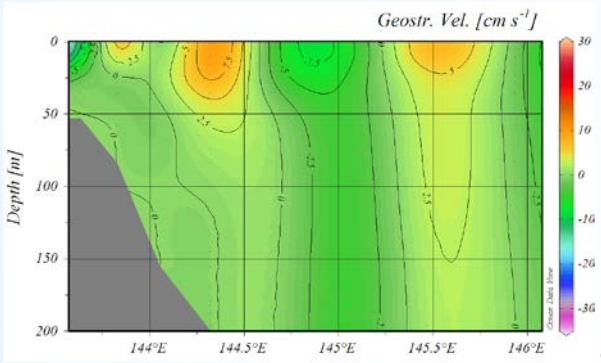
* Vertical distribution of sea water temperature on transects II, III, IV, V (as defined on slide 4)



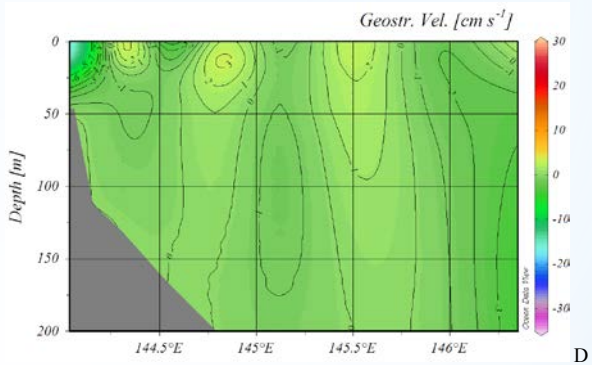
A



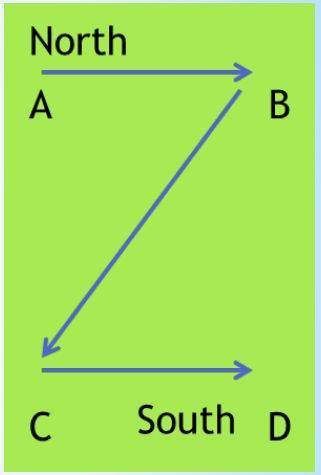
B



C

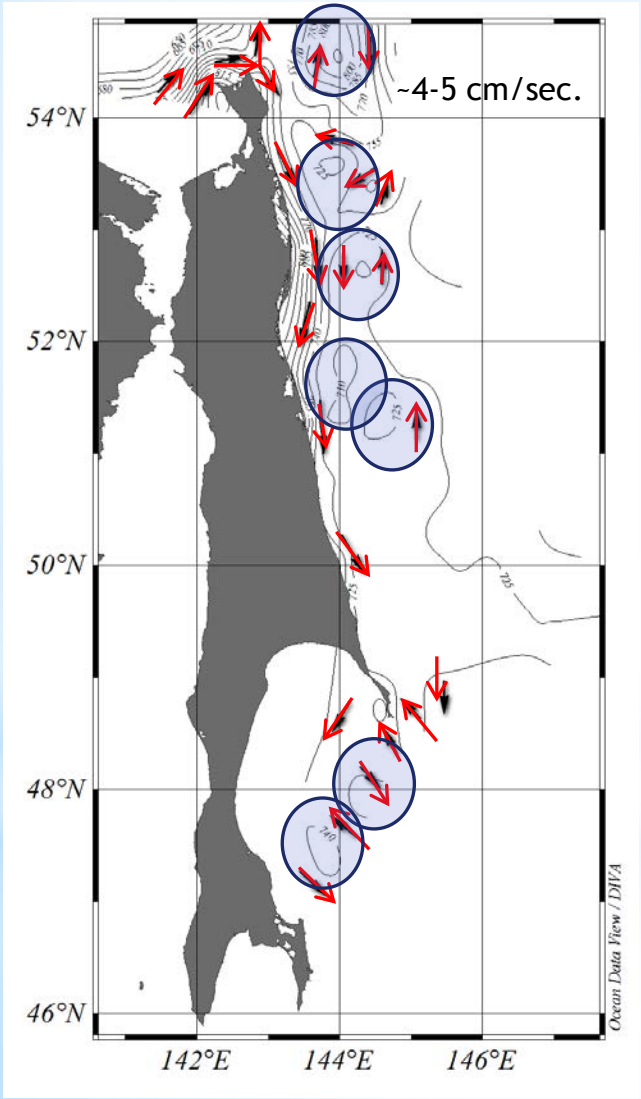


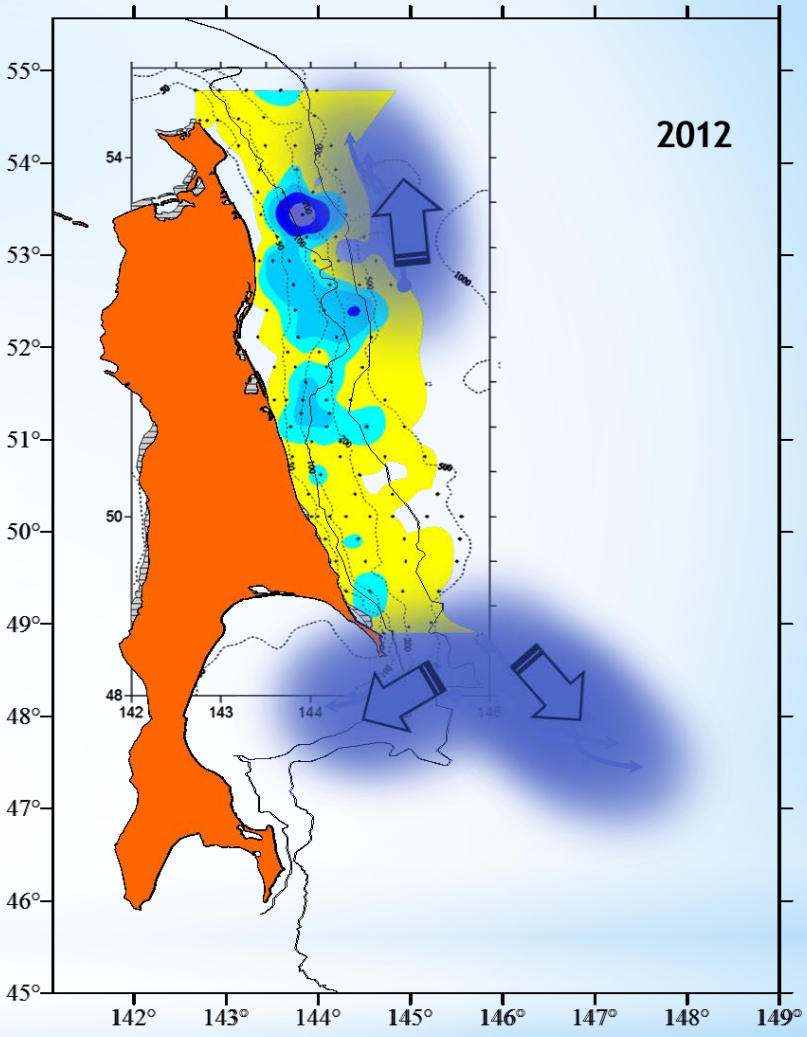
D



* Geostrophic flows on transects 7_III (A), 5-11 (B), 5-10 (C), 5-9 (D)

* General flows in the area in June 2012





Probable tracks of eggs and larvae drift

* Apparent scheme of spatial drift of walleye pollock eggs

*Summary

* The severe thermic regime observed in the near-bottom layer of western Sea of Okhotsk during the breeding period of the walleye pollock is substantially smoothed due to natural mechanisms given optimal spatial-temporary framework for early developmental stages of fish.

Thank you