Geophysical Research Abstracts
Vol. 13, EGU2011-5363, 2011
EGU General Assembly 2011

Upwelling effect, features of the distribution transformed Amur waters and eddies along the northern coast of Sakhalin Island from the satellite imaging data (2006-2007) and hydrological measurements

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The observational data shows that the phenomenon of upwelling was observed along the northern coast of Sakhalin Island. In particular, 20-21 July 2007, with south-east rundown storm winds, the leeward shore in the North Bay the upwelling was observed. For it was characterized by low sea surface temperature - around 0ºC and salinity - more than 32 psu. As is known, in summer the heat surface layer by the northern tip of the island thin and at the depth of 20 m water temperature has a value close to freezing point. It is not surprising that water with such characteristics is in close proximity to the sea surface with effects of eviction. After the termination of the wind phenomenon of upwelling in the North Bay have been destroyed by the entering the heat and freshening water from the Sakhalin Bay, which were a dark color.

The position of the runoff lens of the Amur River and its area essentially changes depending on the features of atmospheric circulation and intensity of the tidal phenomena in this region. In summer transformed Amur water flows into the North Bay, the Sea of Okhotsk, as the runoff lens of the Amur River. On the borders of the lens of freshening waters significant gradients of temperature and salinity and quick change of water color from brownish to deep-blue are observed. Freshening of the surface layer in the lens is traced up to depth of 20 m, thus the most fresh water borrows a surface layer about 5 m thick. The runoff lens is well traced on IR-images from July to September. There is specific broad sand bar in this part of the shelf and reverse tidal currents are dominating on it along the coast. Contrasts of color and temperature on the borders of Amur stock lenses make it easy to identify its spatial dimensions and help in the research patterns of their distribution in the North Bay.

Moving transformed Amur waters from the Sakhalin Bay into the North Bay, under certain conditions formed anticyclonic eddies and fronts of the meridional orientation. For example, in July - August 2006 on satellite images indicated the formation of three anticyclonic eddies. In these eddies formation of the zones of warm and cold waters are occur. The life time of these eddies about a few days.