

## **Satellite measured seasonal and interannual variability of primary production at the scallop farming area in the Okhotsk Sea**

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### **Abstract**

Seasonal and interannual variation of primary production after the retreat of sea ice at the scallop farming area along the Hokkaido coast off Okhotsk Sea (1998–2004) was determined using satellite images. Interannual variability of primary production occurred from the variability in occurrences of physical processes associated with the advection of the Soya Warm Current (SWC) and intrusion of the East Sakhalin Current (ESC). Variability in primary production resulted in variability of Chl-*a* concentration that was also demonstrated by EOF analysis. Enhancement of Chl-*a* in the frontal area in late spring was shown by the second EOF mode of Chl-*a* (14.2% of variance) in parallel with the generation of a well developed frontal area resulting from the advection of warm waters of the SWC along coast in late spring indicated by the second EOF mode of SST (1.8% of variance). Elevated Chl-*a* and occurrence of cold waters of the ESC in late autumn were also highlighted by the third EOF mode of Chl-*a* (9.0 % of variance) and SST (1.5% of variance). Prolonged high primary production in the scallop farming area after spring is supported by the development of a frontal area in summer and enforcement of the ESC in autumn.