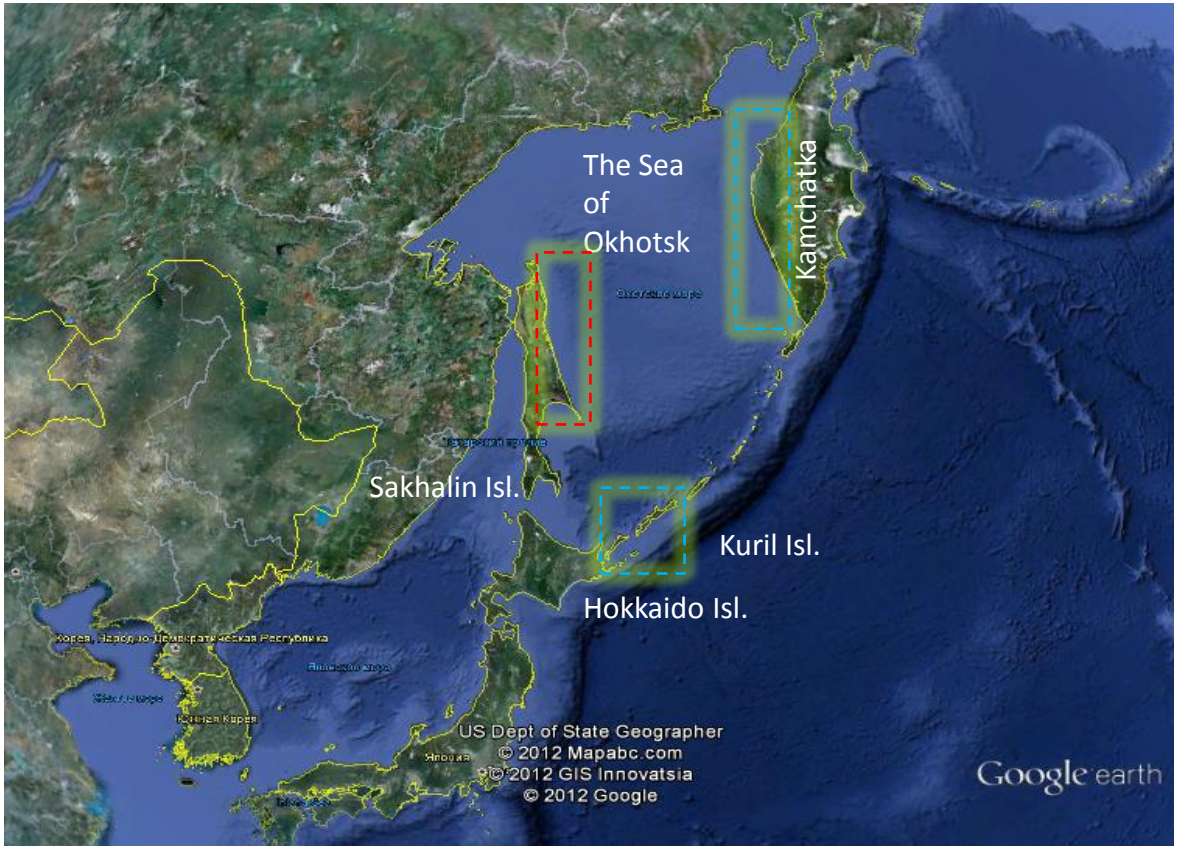
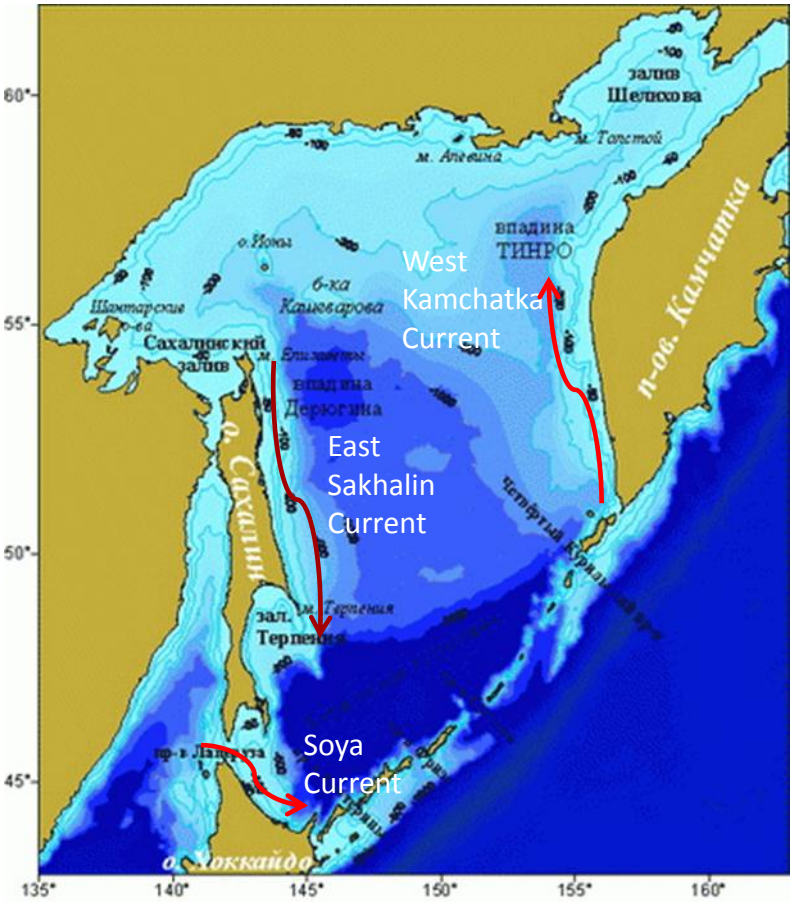


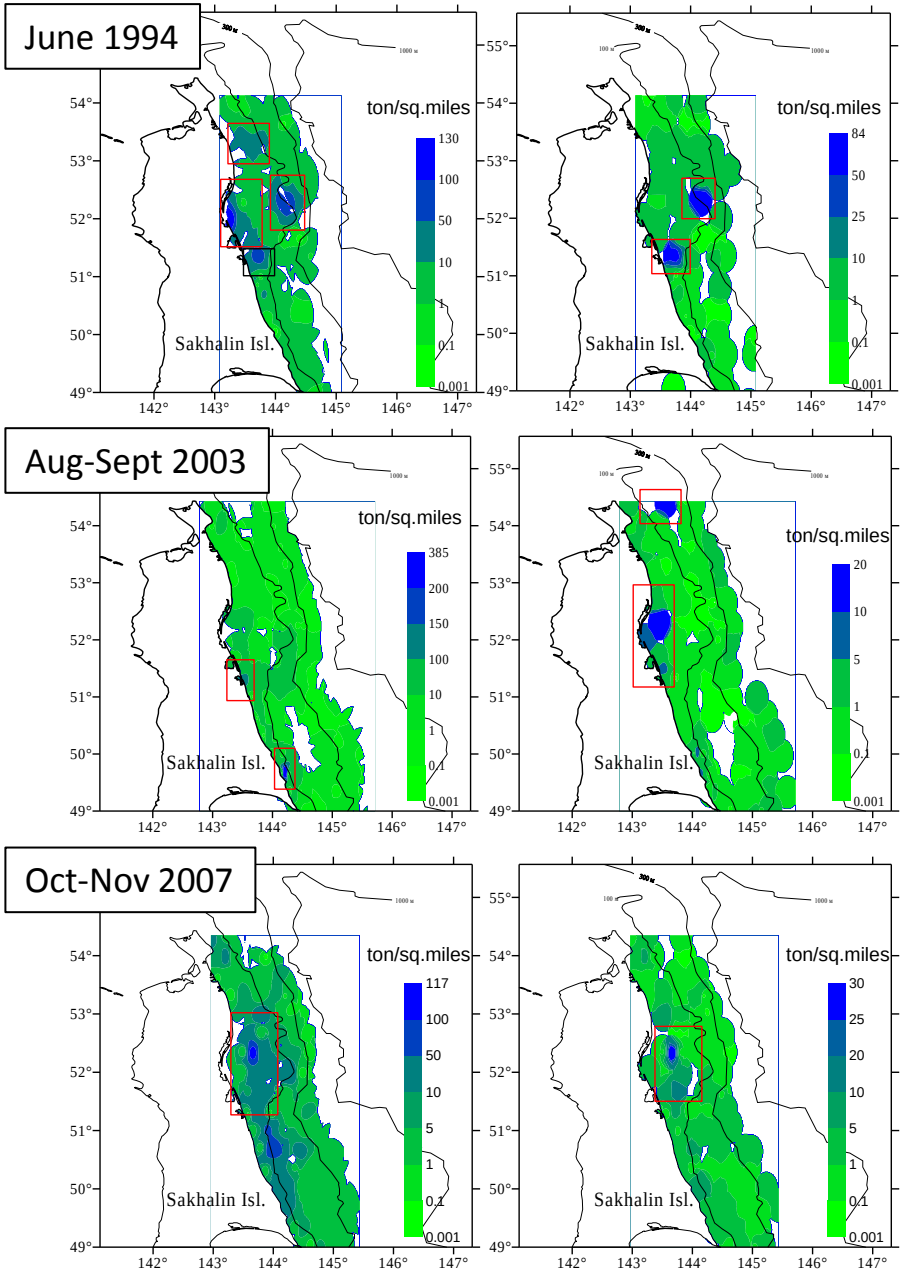
Spatial distribution and long-term dynamics of demersal fish biomass within East Sakhalin Current area, Sea of Okhotsk

Sen Tok Kim

Sakhalin scientific research Institute of fishery and oceanography (SakhNIRO)

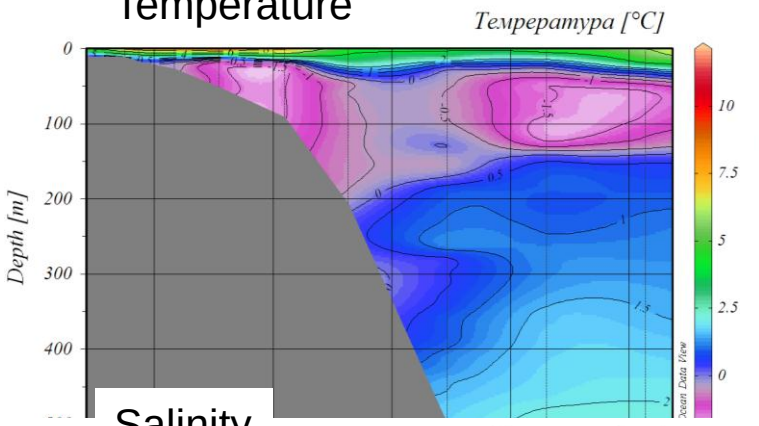
Total fish biomass distribution with (left) and without (right) walleye pollock



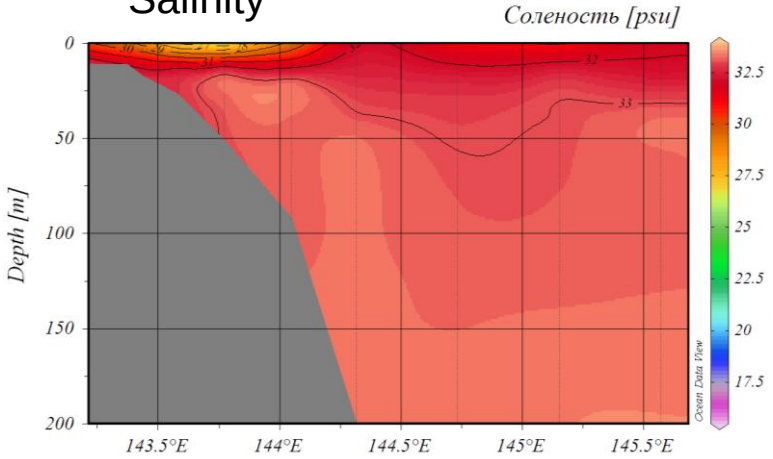


The vertical and horizontal profiles of temperature and salinity of waters at Eastern Sakhalin Island in June 2012

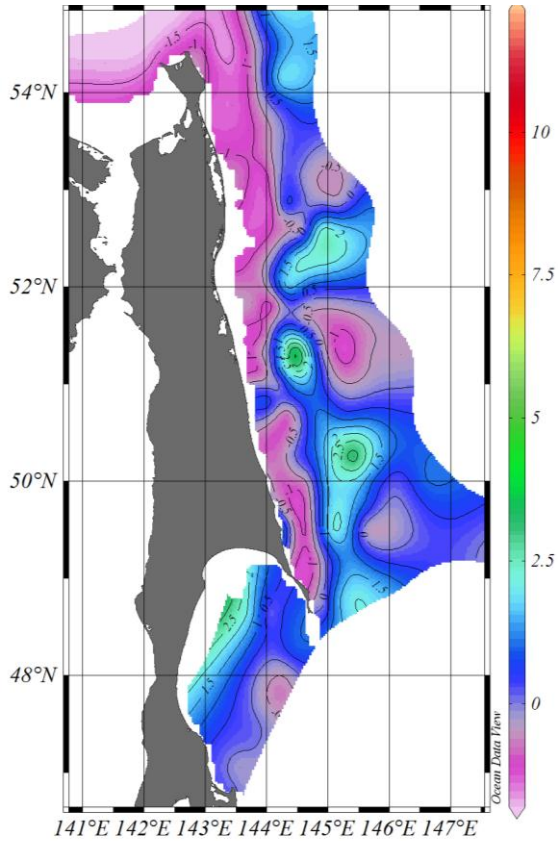
Temperature



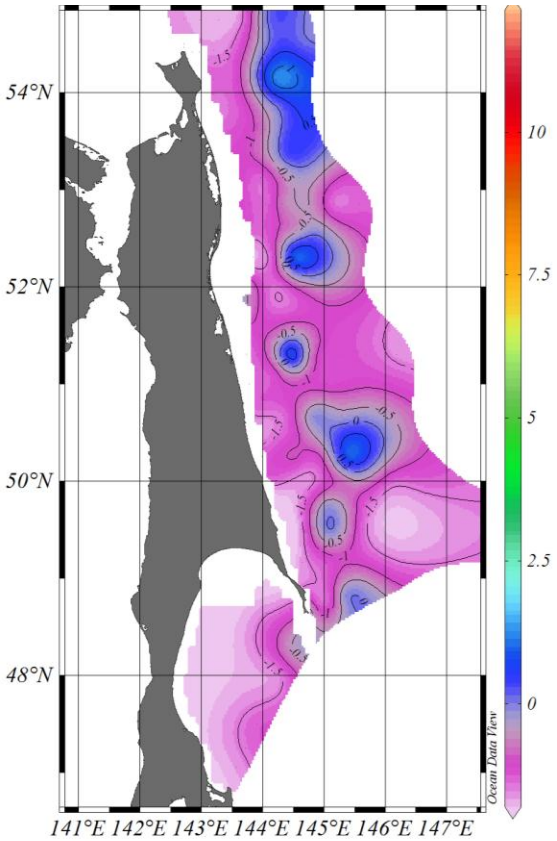
Salinity



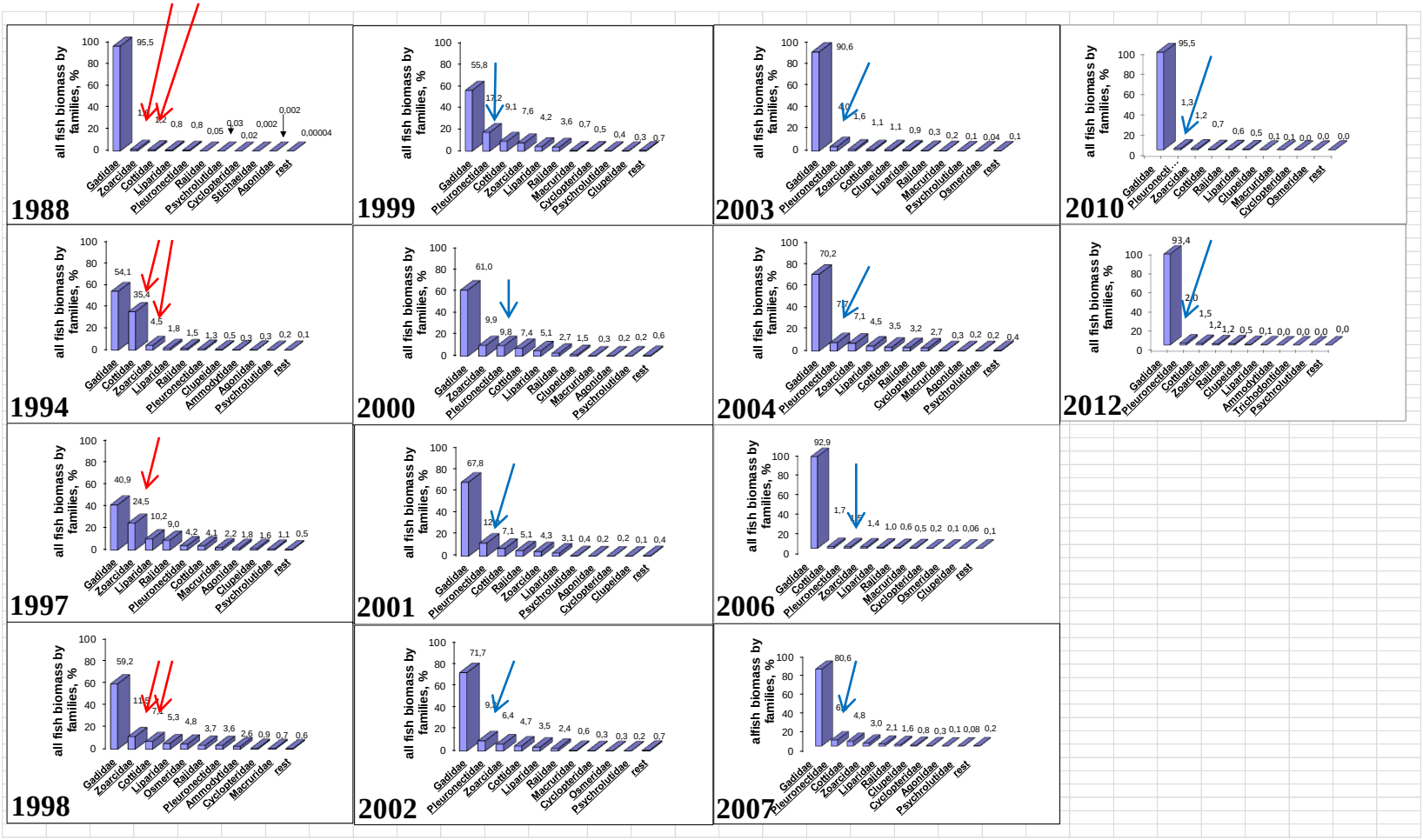
Temperature on horizon 30 m



Temperature on horizon 50 m



Ranking of all fishes biomass by families in East Sakhalin waters in 1988-2012 (red arrow – Cottidae, Zoarcidae, blue – Pleuronectidae)



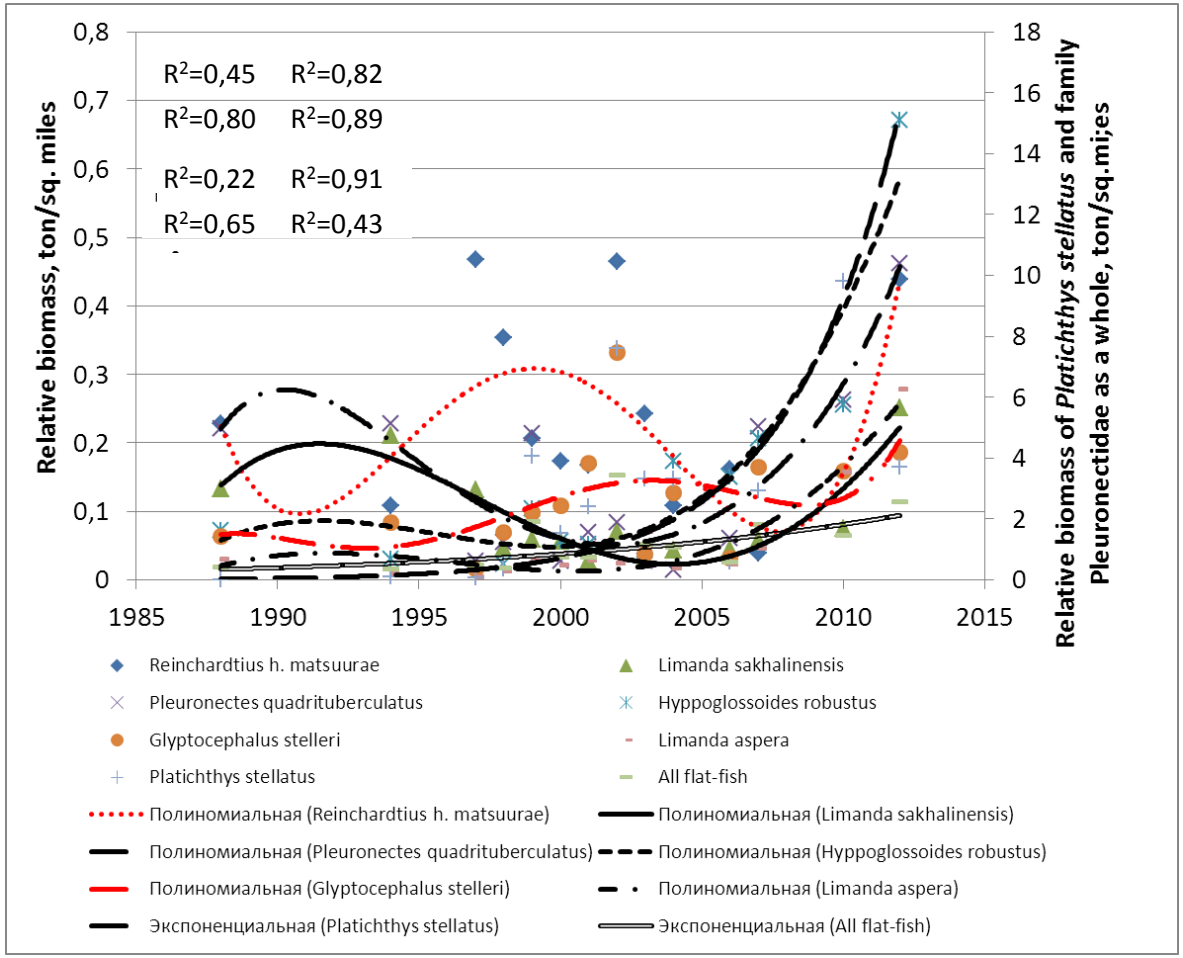
Long-term dynamics of flat-fishes in north-eastern waters of Sakhalin Isl.

Reinchardtius h. matsuurae

Glyptocephalus stelleri

Platichthys stellatus

Pleuronectidae



Hippoglossoides robustus

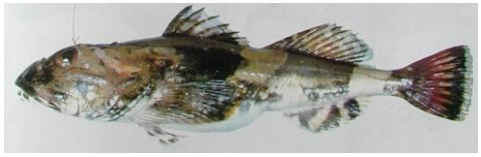
Limanda aspera

Pleuronectes quadrituberculatus

Limanda sakhalinensis

Long-term dynamics of cottid-fishes in north-eastern waters of Sakhalin Isl.

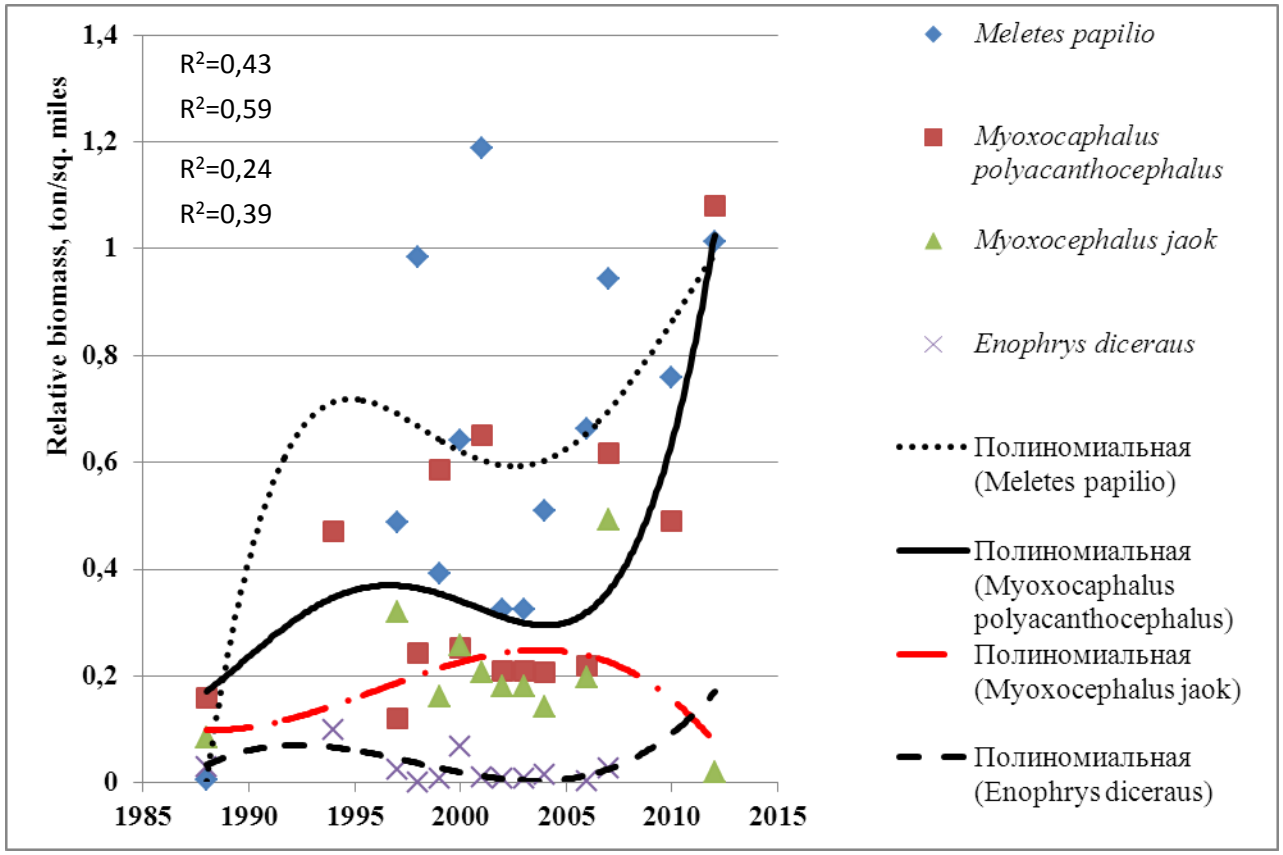
Melletes papilio



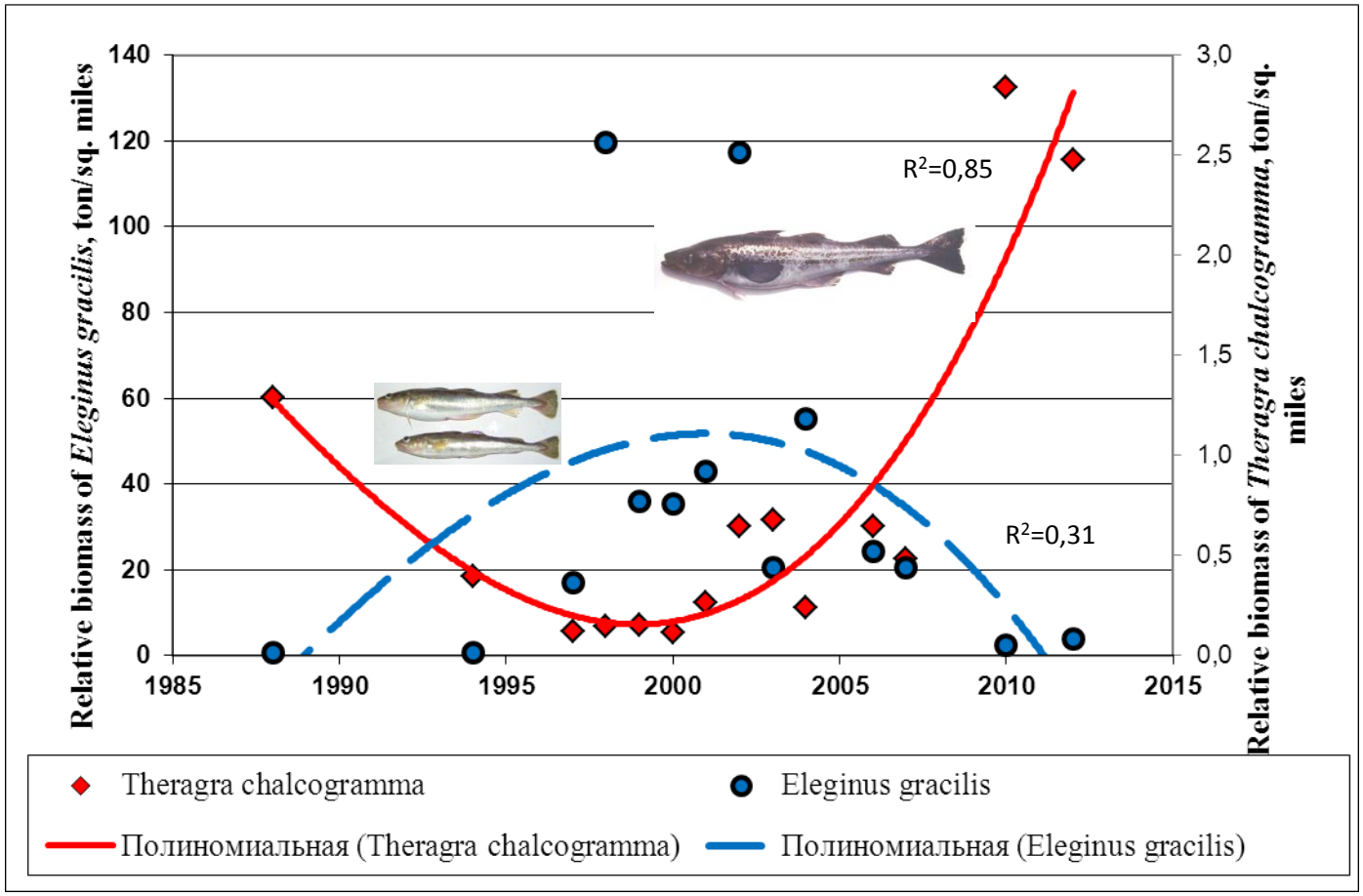
Myoxocephalus polyacanthocephalus

Myoxocephalus jaok

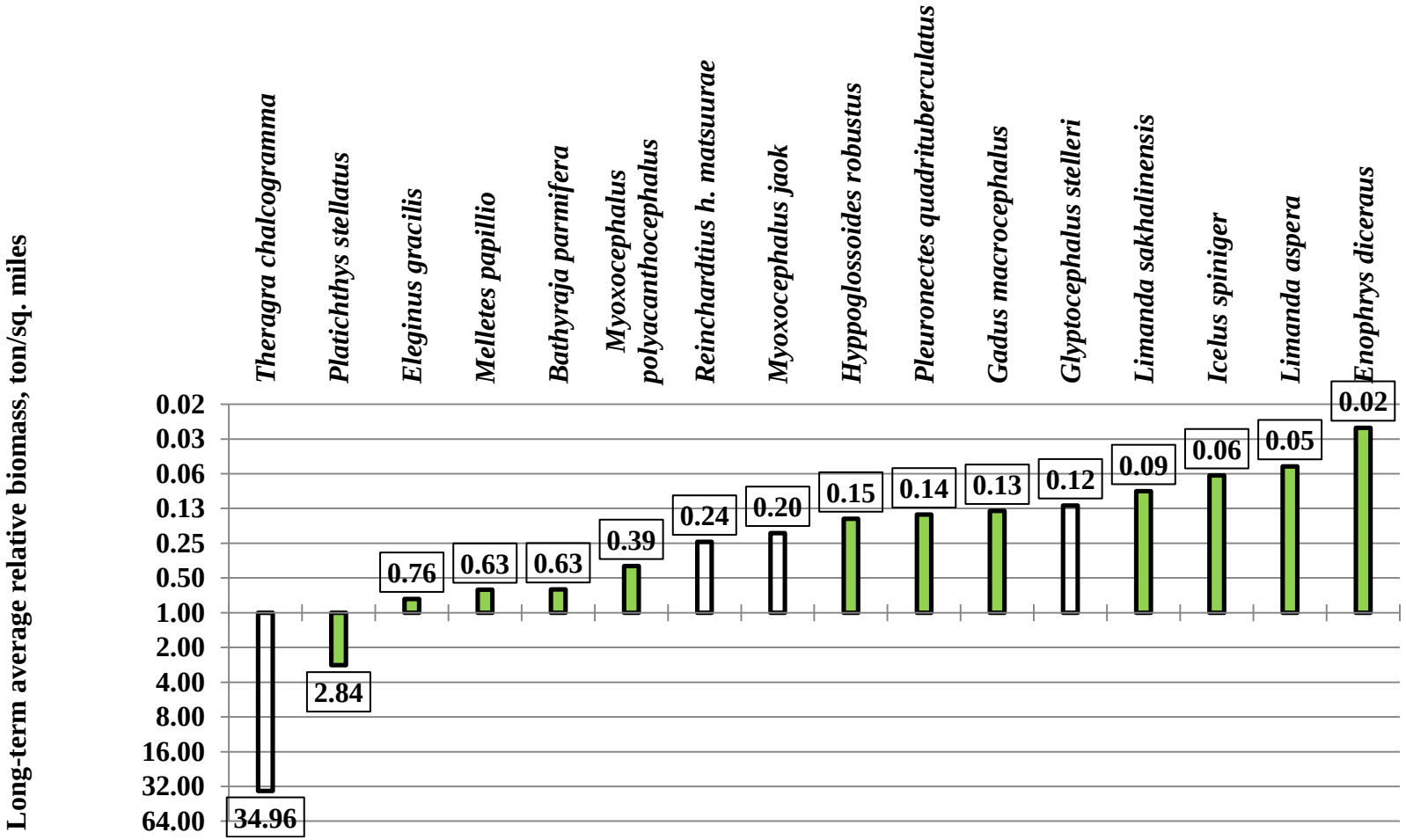
Enophrys diceraus



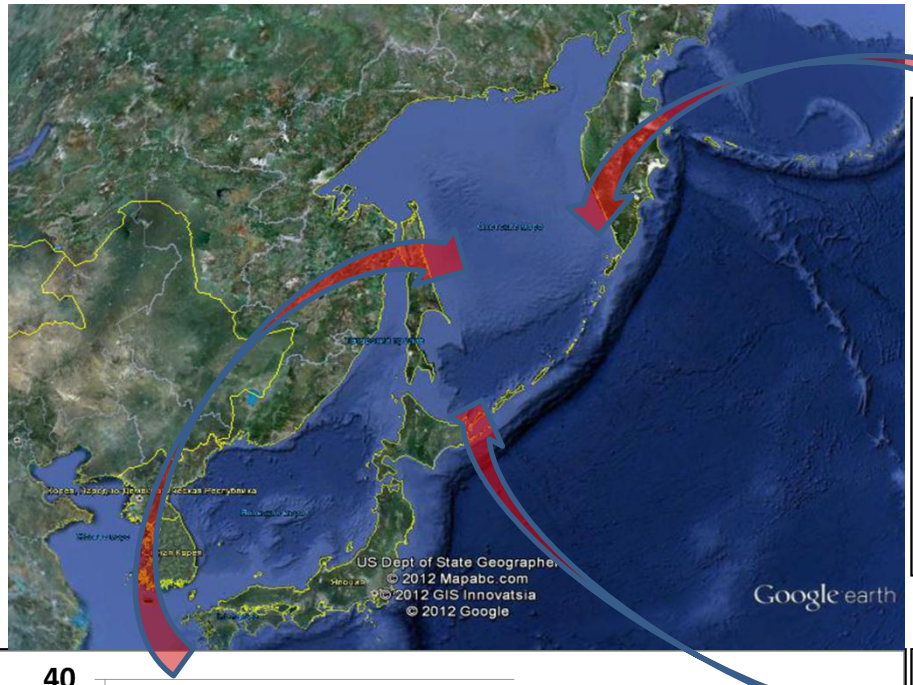
Long-term dynamics of gadid-fishes in north-eastern waters of Sakhalin Isl.



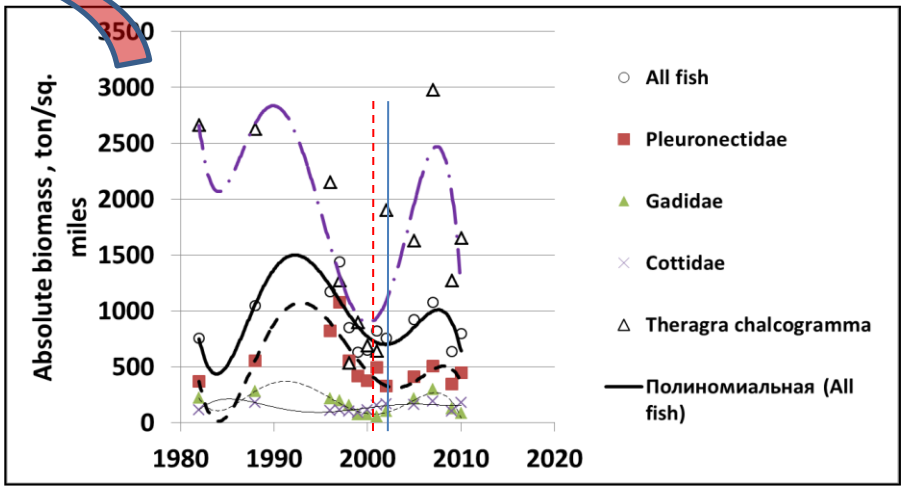
Species arrangement on average relative biomass, tons/sq. miles by logarithm scale

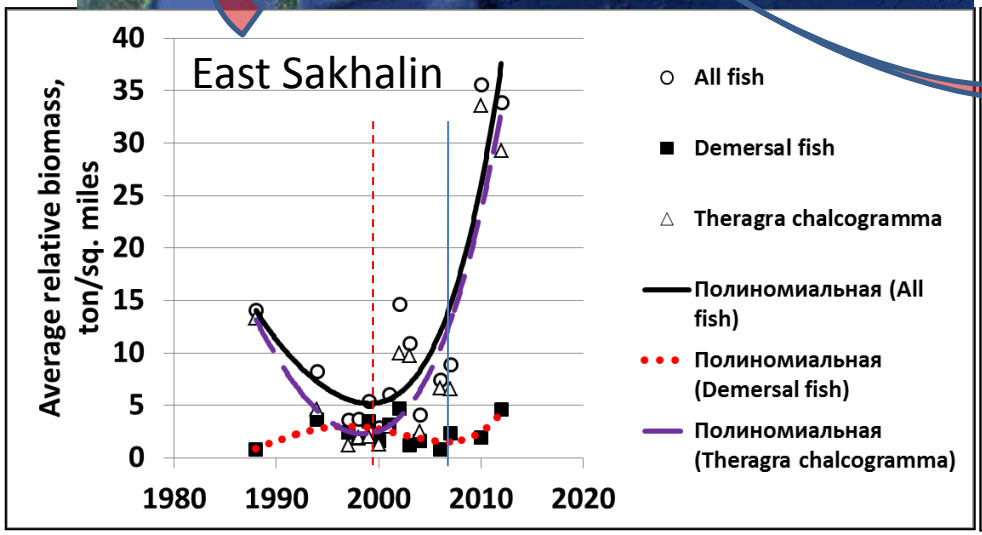


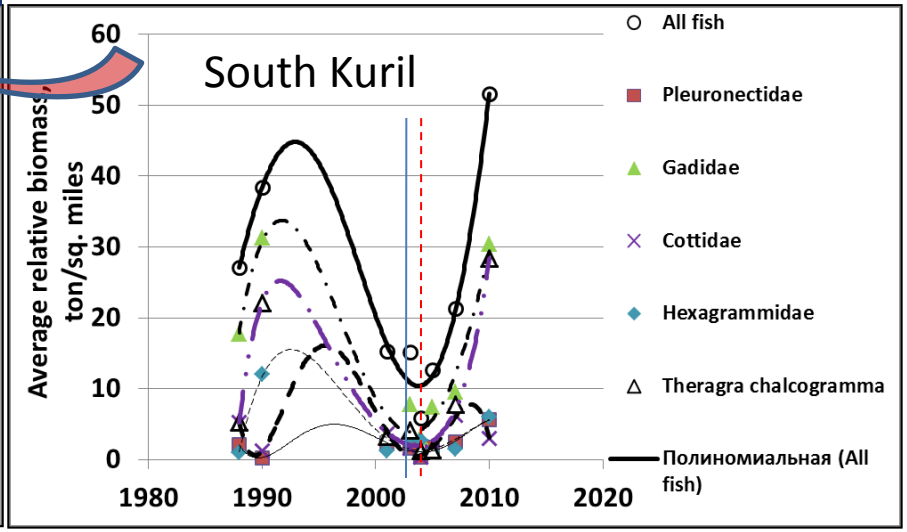
Long-term fish dynamics in West Kamchatka (Savin et al., 2011), South Kuril and East Sakhalin waters of the Sea of Okhotsk



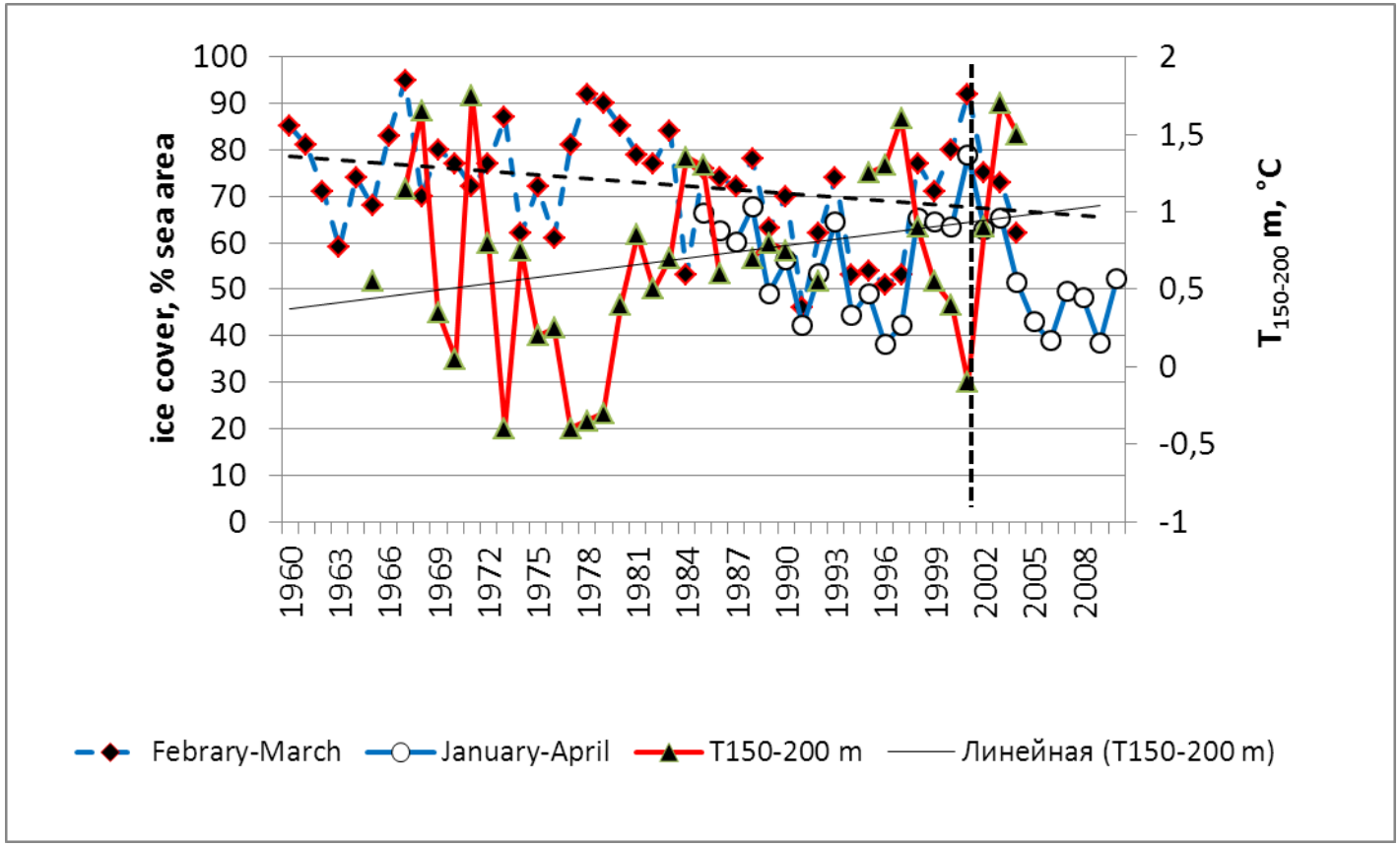
West Kamchatka



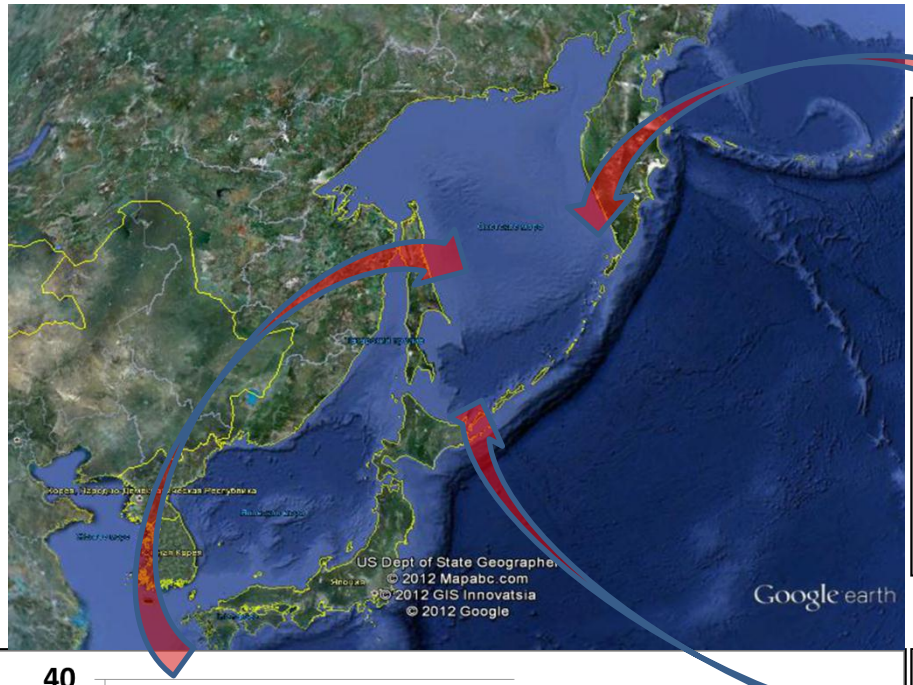




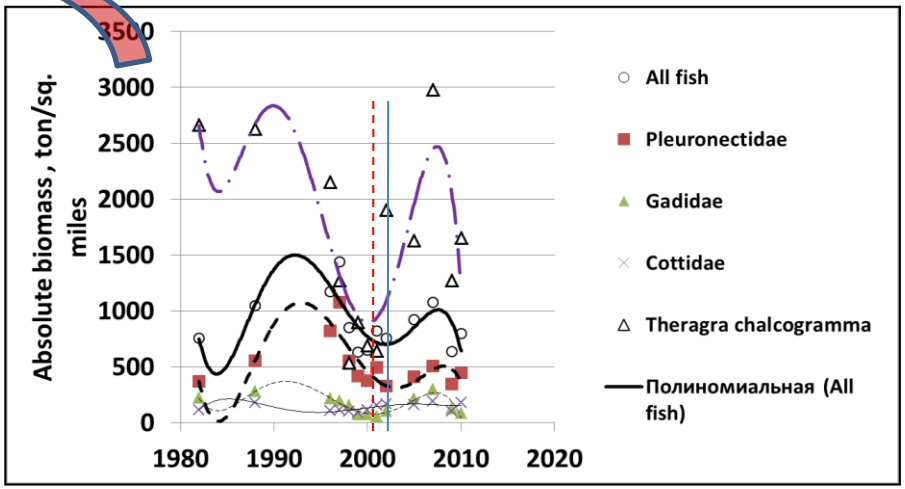
Ice cover averaged over February–March of 1960–2004, January–April of 1985–2010, and bottom-water temperature averaged for depths of 150–200 m along the West Kamchatka coast in July of 1965–2004 (after Figurkin, 2006, 2011; Ohshima, 2008)

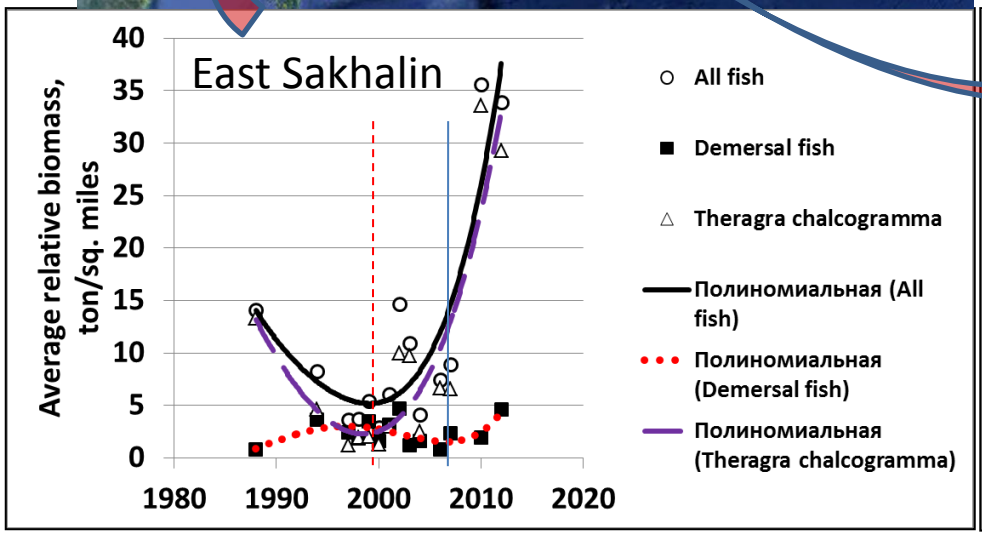


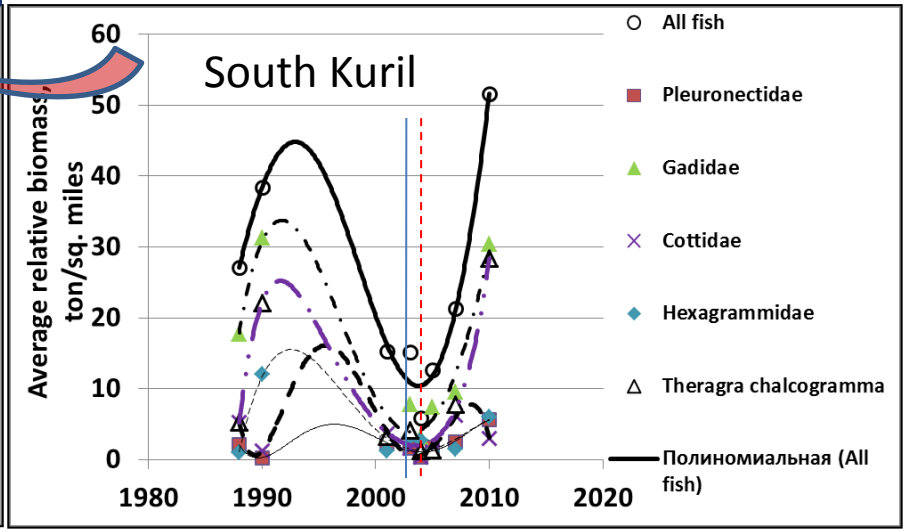
Long-term fish dynamics in West Kamchatka (Savin et al., 2011), South Kuril and East Sakhalin waters of the Sea of Okhotsk



West Kamchatka







Summary

- **In the Sea of Okhotsk the long-term dynamics of demersal fish communities at three observing areas had similar trends of changes;**
- **North-eastern Sakhalin waters reflects some lagging of growth or decline of all demersal fish biomass from another areas;**
- **The walleye pollock resources have similar trends of its biomass in southern and northern parts of the sea with some lagging of the dynamics in first area;**
- **Main factor caused delay of demersal fish biomass trend in northeastern Sakhalin area might be the severe ambient in northwestern part of the sea;**
- **Variable habitat influences the demersal fish communities changing their biomass according to preferences of species.**