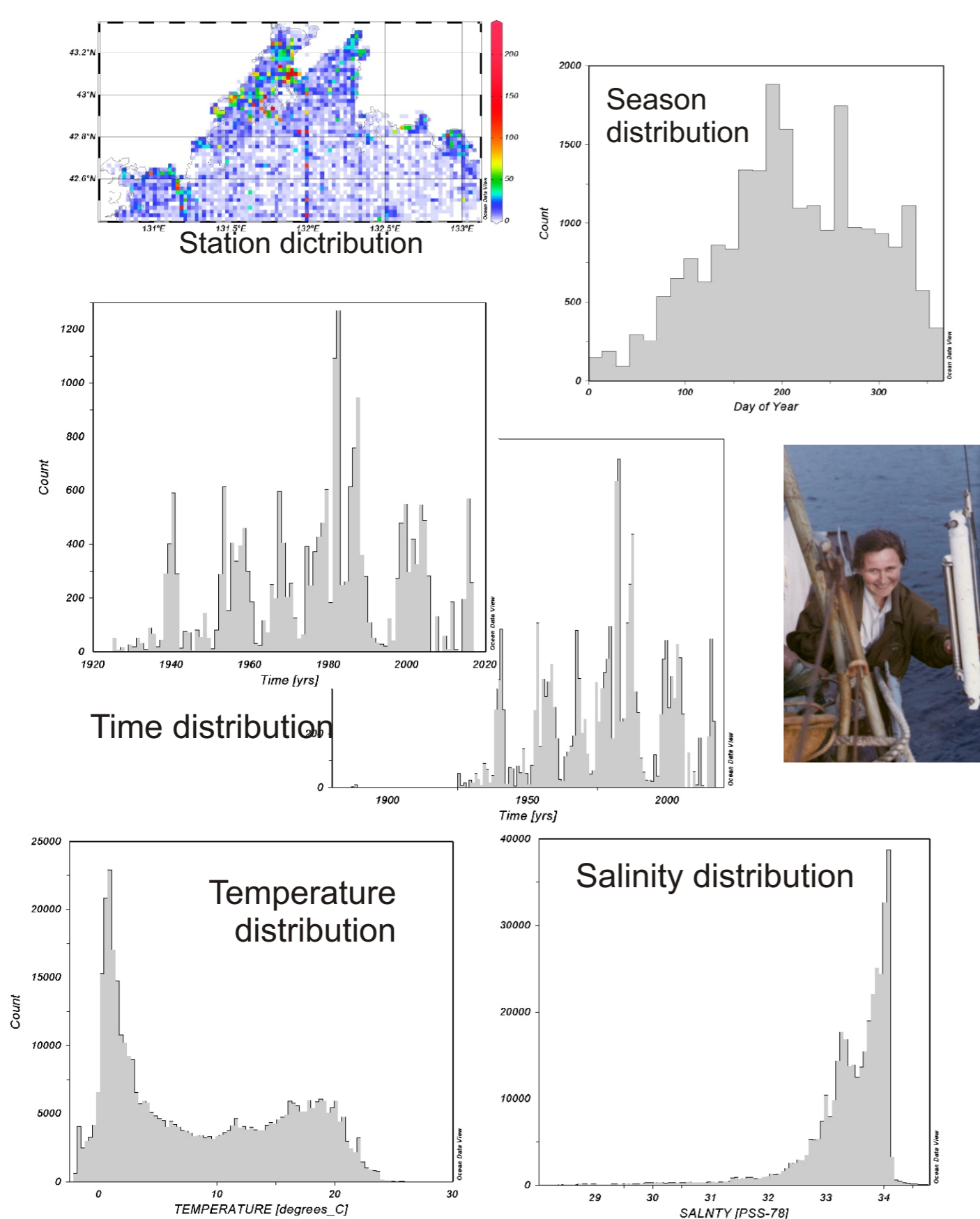


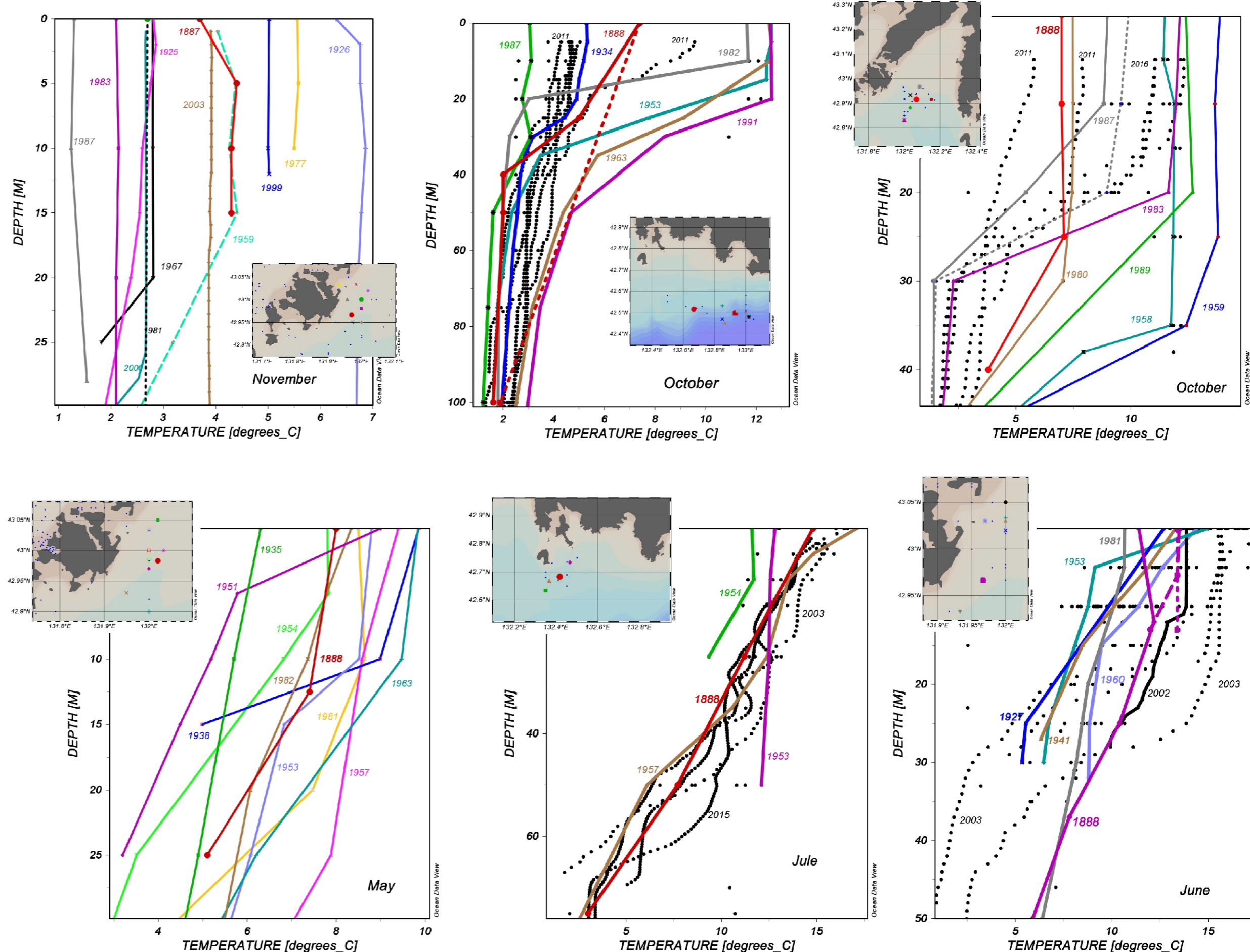
Instrumental observations in Peter the Great Bay during more than 100 years: what changed?

Natalia I. Rudykh

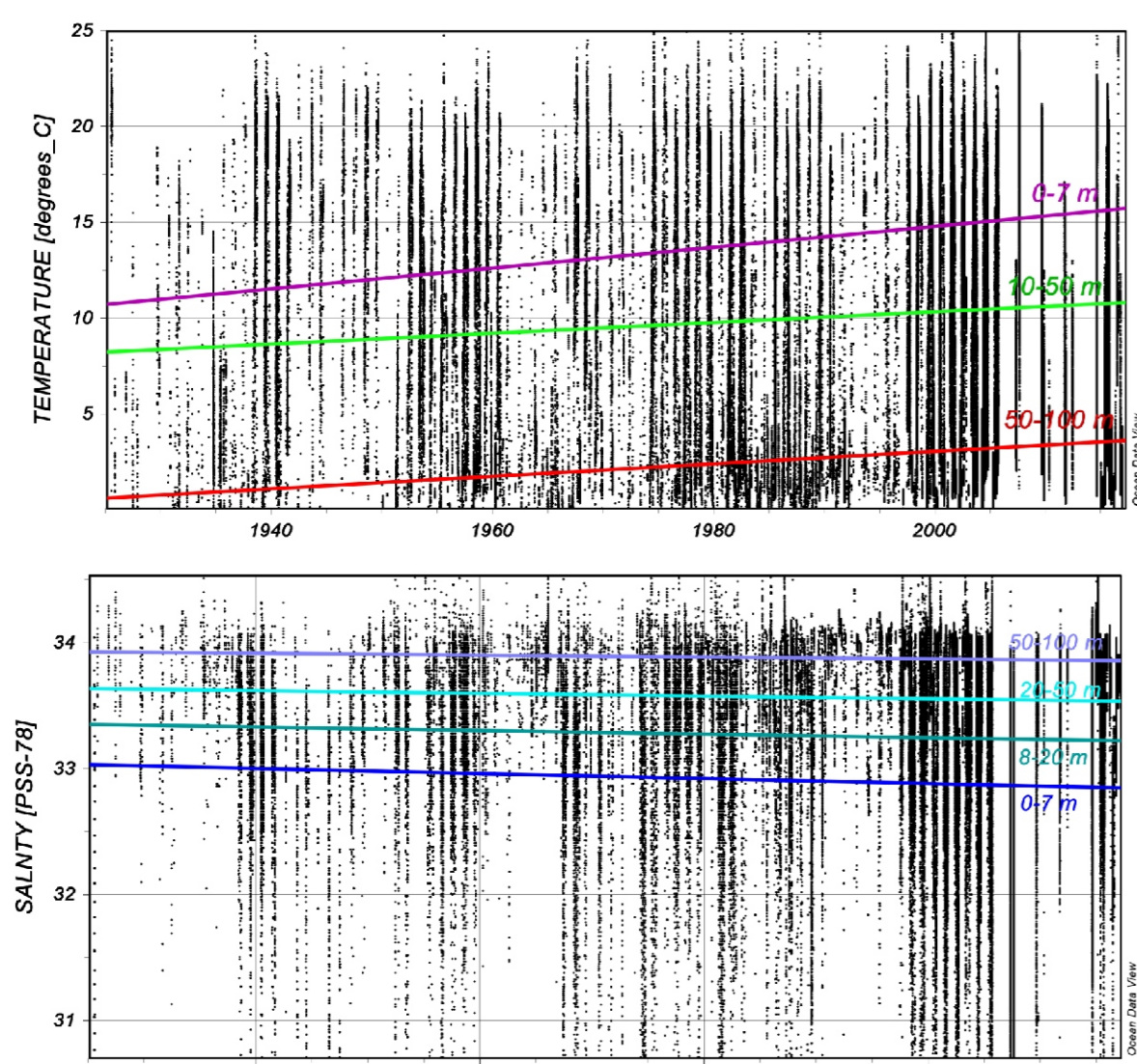
V.I. Il'ichev Pacific Oceanological Institute, Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Russia. E-mail: rudykh@poi.dvo.ru



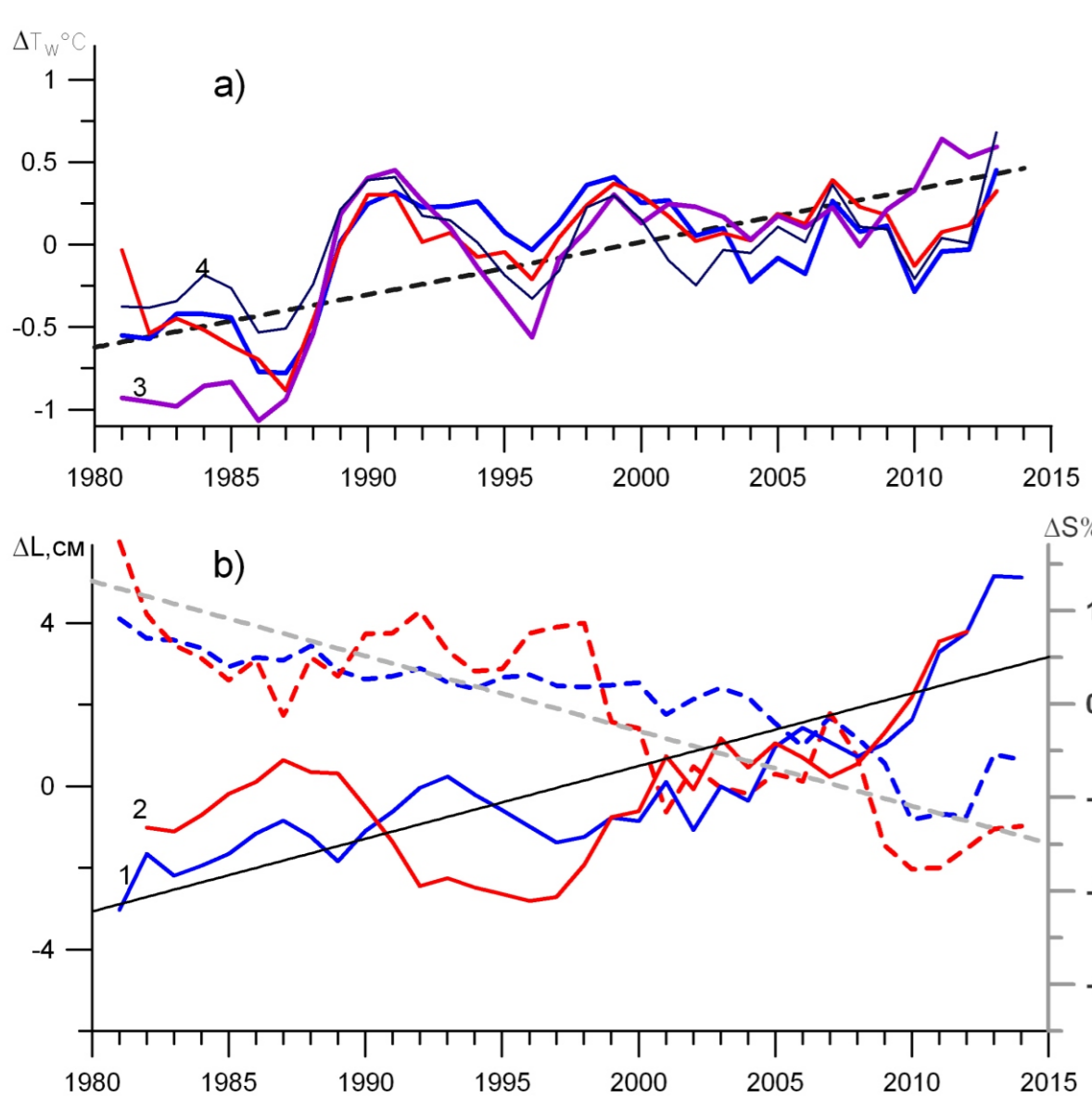
Data: 1887-1888, 1925-2017; >20 000 temperature, >18 000 salinity station; 4 coast station



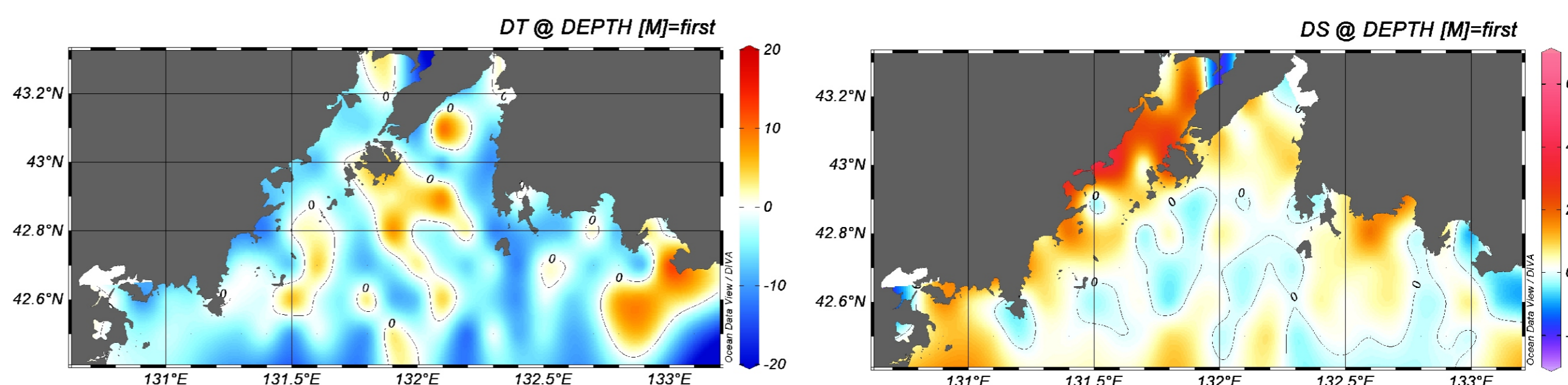
The early oceanographic studies in Peter the Great Bay were executed by a corvette Vityaz under the leadership of S.O. Makarov in 1887-1888. Comparison of the first temperature profiles with the subsequent shows not considerable variability of thermal structure of the bay. Practically in all cases the profiles of the 1800th years hold average position among the close on time and space stations of various years. And only in August it is possible to notice warming. As you proceed, remember that the August stations set is situated at the east of the area in which warming is also revealed (see maps below).



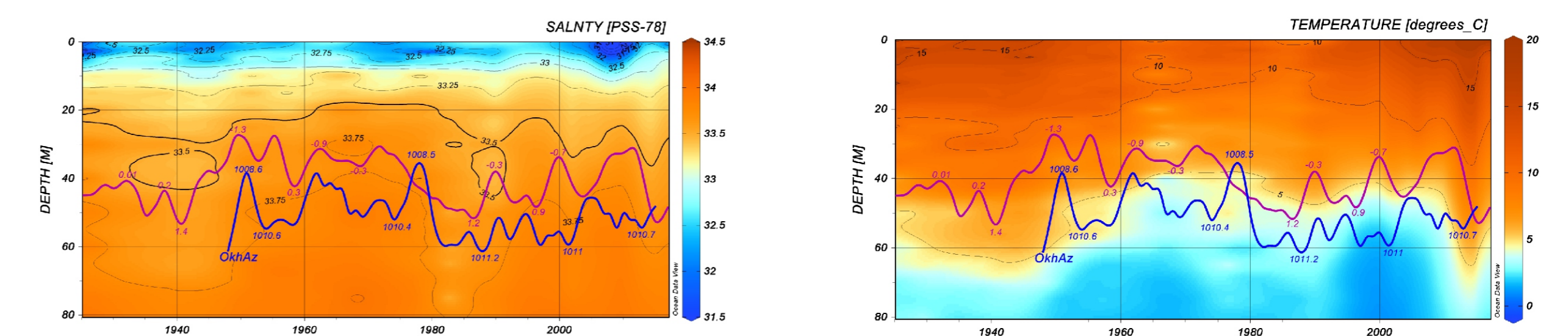
Temperature and salinity trend in some layers of Peter the Great Bay



The three-year smoothed anomalies of hydrological characteristics and its linear trends at coastal stations: 1, 4 - Vladivostok, 2 - Posiet, 3 - Nakhodka water temperature (a), level and salinity (b)

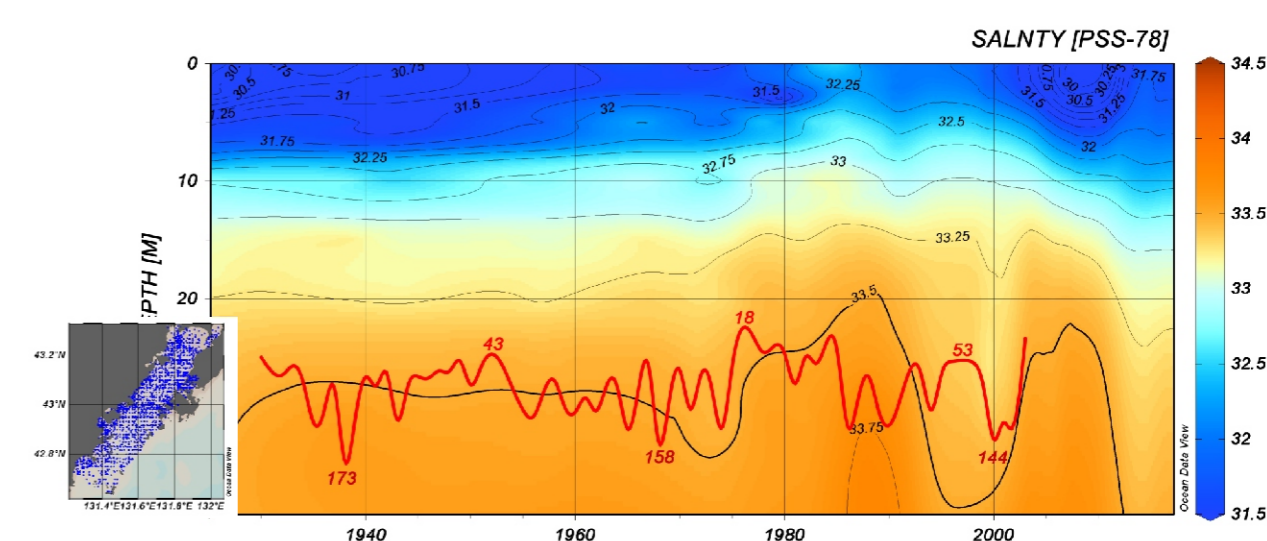


The difference between average temperature and salinity during 1978-2017 and 1925-1977



Comparison of temporary variability of temperature and salinity with the climatic indexes significant for the explored region: PDO - pacific decadal oscillation, OkhAz - index of Okhotsk anticyclone (TINRO)

Climatic changes in Peter the Great Bay are coordinated sufficiently with both global and local variability. Open waters respond to global changes first of all, coastal more subject to local changes are practically not coordinated with global trends.



Interannual variability of salinity in Amur Bay and a Razdolnaya river runoff