

Cooperative US-Russian Research on the Okhotsk Sea

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LONG-TERM GOALS

The long-term goal of this work is to acquire data from the Russian environmental database for the Okhotsk Sea.

OBJECTIVES

The objective is to gain access to the Russian database for the Okhotsk Sea. This includes both oceanographic and meteorological data stored in Russian archives. The database probably contains at least 50,000 temperature/salinity stations for the Okhotsk Sea, as well as analogous meteorological data. Some of the data in the archives was collected as early as 1899.

APPROACH

I have been discussing this project with Russian colleagues in Vladivostok for several years. Providing data of this kind to foreigners is still a touchy subject in Russia. The parties involved have agreed to provide specific data products based on the raw data in the archives. However, they cannot and will not provide raw data.

WORK COMPLETED

My Russian colleagues have recently delivered the agreed-upon products. The products include temperature, salinity, and oxygen (where available) profiles gridded at 1-degree (latitude and longitude) intervals for the Okhotsk Sea, with observations averaged at approximately 5 meter intervals from top to bottom in the water column. The observations are binned by seasons. Additionally, we have obtained information concerning the seasonal variability in mixed layer thickness, and the temporal variability of this quantity since 1920, as well as a history of sea ice cover for the region. Our colleagues have also provided statistical information concerning the wind fields in the Okhotsk Sea regions, plus a statistical analysis of the tracks and intensity of major storms in the region during the 20th century. Although moored current observations are somewhat sparse in the region, the Russians have provided an analysis of currents at the sea surface and at selected subsurface depths from their database.

RESULTS

The data products were just received at the beginning of September, 2001. They were examined in detail, and based upon this examination some changes were requested in the data products. It is estimated that the corrected products should be received by mid-October 2001.

IMPACT/APPLICATION

These data products should be quite useful for initializing numerical models of the region, plus to compare to the results of these models. Since the historical database for this region is so sparse, especially in winter, these results should greatly improve the ocean/atmosphere climatology of this region.

TRANSITIONS

None yet.

RELATED PROJECTS

This project is closely related to the US ONR/Japan Sea project. Additionally, Drs. Lynne Talley, Dan Rudnick (SIO) and Seelye Martin (UW) and I have been observing the Okhotsk Sea, with NSF and Hokkaido University funding. Since 1998, we have deployed and recovered moorings in the Okhotsk Sea, carried out extensive CTD surveys, and used remote sensing techniques to study the seasonal and regional variability of the circulation of the Okhotsk Sea.