3. White Sea Biological Station

The White Sea Biological Station (WSBS) of the Zoological Institute, Russian Academy of Sciences, was established in 1949 as a separate scientific unit under the Karelian-Finnish Branch of the USSR Academy of Sciences. The station lacked a permanent base during the first eight years, and studies were performed only in the summer from the research vessels (R/Vs) "Professor Mesyatsev" and "Ispytatel." The material collected during the summer periods was then processed during the winter in Petrozavodsk and Belomorsk.

In 1957, the WSBS moved to Cape Kartesh, located in the Chupa Inlet of Kandalaksha Bay (Figure 3). Professor V.V. Kuznetsov, the first Director of the station, outlined the critical scientific objectives to be studied: seasonal, annual, and long-term variations in living conditions and features of organisms inhabiting the White Sea. These objectives matched the goals declared by the Presidium of the Academy of Sciences in 1960:

> "Studying seasonal, annual, and long-term variations and changes in main biological objects, in particular, the population dynamics of key fauna and flora species of the White Sea; studying seasonal, annual, and long-term variations and changes in living conditions for different biological groups inhabiting the White Sea."

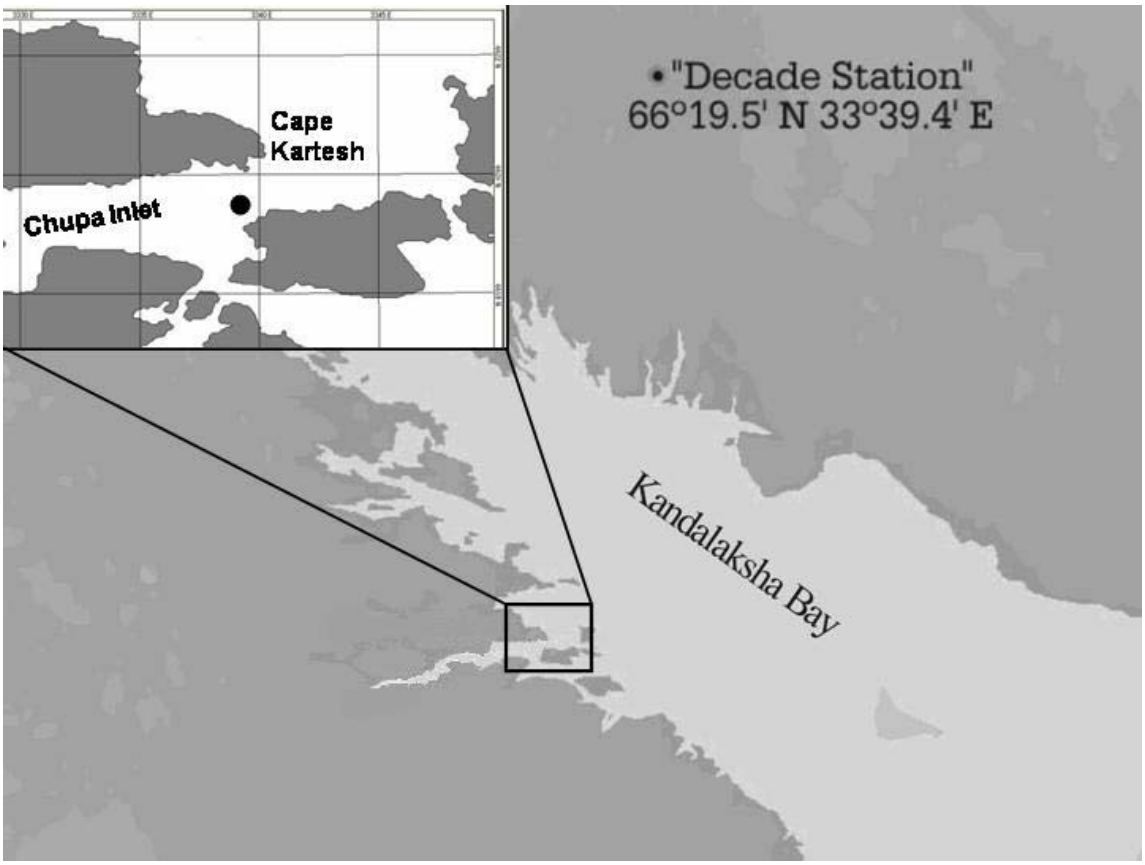

Figure 3. Map showing the current location of the White Sea Biological Station.

Soon after the WSBS moved to Cape Kartesh on 19 July 1957, regular hydrological and plankton observation commenced. These observations were carried out at a standard depth of 66 m at a point in the mouth of the Chupa Inlet. This location was named Decade Station D1 because data was collected there from research vessels every ten days from the spring to autumn (in the Russian language, *decade* means a period of ten days). In the winter, when ice cover was present, data was collected once a month.

In December 1957, R.V. Pyaskowsky initiated regular hydrological observations of water temperature and salinity at different depths. Over a short period of time (until the late 1960s), P.G. Lobza carried out various hydrochemical observations, and in 1966-1967, T.V. Klebovitch performed short-term phytoplankton studies.

The hydrological observations have been carried out from 1949 until the present time with only short interruptions. Until 1961, the lead for these observations was R.V. Pyaskowsky; during 1961-1971, Yu. M. Savoskin took over; and from 1971-1995, A.I. Babkov took charge. Since 1995, V.Yu. Buryakov, M.E. Sorokin, and I. M. Primakov have led these efforts.

Studies on zooplankton were started in summer 1957 and performed irregularly during the first three years. From 1961 until the present time, regular observations have been carried out with short intermissions. Standard techniques have been used to collect water samples and process the data (refer to the section on Methodology). Those involved with the collection of water samples and processing of the data obtained at Decade Station D1 were R.V. Prygunkova, S.S. Burlakova, S.S. Ivanova, I.P. Kutcheva, N.V. Usov, M.A. Zubaha, and D.M. Martinova.

V.Yu. Buryakov and M.A. Zubaha were the first to compile an electronic plankton and hydrological database in Microsoft Excel format along with a set of built-in retrieval procedures using Visual Basic.

Since 1961 and for every ten days throughout the year, scientists have measured temperature and salinity at 0, 5, 10, 15, 25, 50, and 65 m and obtained zooplankton samples from 0-10, 10-25, and 25-65-meter depths. As a result, scientists have collected abundant data to study the development cycles for different plankton species and the environmental effects on zooplankton abundance and structure. The results of these studies have been presented in numerous reports and several monographs, which are listed on the CD-ROM under References.