

**THE BRIEF HISTORICAL DESCRIPTION AND MAIN RESULTS OF ATLANTNIRO'S BIOLOGICAL AND OCEANOGRAPHIC RESEARCH ON ANTARCTIC ECOSYSTEM.**

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The AtlantNIRO have started researches in Antarctic since 1961, providing the scientific base for the sustainable fishery for krill and fish. The scientific data were collected by specialized research vessels and observers onboard of fishing vessels as well, more than 100 in total. There were published near 700 scientific papers on krill, fish, marine mammals, chemical composition of target species, oceanography, hydrochemistry, meteorology, etc. There was revealed an imbalance of the primary and secondary production in Antarctic ecosystem: consumers of the second layer take less than 26-33% of the primary production; the surplus of organic matter is delivered by deep oceanic currents to distant areas providing bioproductivity's increase via heterotrophic food chain. Last years there was revealed the synchronous oscillations in the fields of the anomalies of atmospheric pressure at the sea level and in the fields of the anomalies of sea surface temperature in 1958-2002. These variations include more than ¾ of the total changes of these parameters. The revealed transformation of these oscillations, interpreted as the Antarctic Circumpolar Wave manifestation, is characterized by decrease of oscillations' period from 5,5-7,0 years (1958-1978) to four years (1979-2002) and increase in oscillations amplitude in second period. It was shown, that in 1979-1992 the large-scale shift of the Soviet fishing effort between subareas 48.1, 48.2 and 48.3 well corresponded to this quasi-four-year periodicity. Last years AtlantNIRO proceeds in collecting new data in Antarctic onboard of the scientific vessel "Atlantida" and by observers as well. The AtlantNIRO database was collected in subareas 48.1, 48.2, 48.3, 48.4, 48.5 and 48.6. It includes 246107 biological analyses and 1438500 length measurements of krill, 304 stations for primary production, 452 stations of the chlorophyll content, 1404 stations of zooplankton and 1694 phytoplankton assessment, 5280 complete deepwater oceanographic stations, 39000 oxygen content, 10000 silicates, 6000 phosphates and 2400 nitrates measurements. The database allows retrospective analyses of Antarctic ecosystem in many directions.