P1. MONITORING OF THE THERMOABRASIONAL AND ACCUMULATIVE COASTS NEAR THE UNDERWATER GAS PIPELINE ROUTE ACROSS THE BAYDARATSKAYA BAY, KARA SEA

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The coasts of Baydaratskaya Bay are composed by loose frozen sediments. At Yamal Peninsula accumulative coasts are predominant at the site where pipeline crosses the coast, while thermoabrasional coast are prevail at the Ural coast crossing site. Coastal dynamics monitoring on both sites is conducted using field and remote methods starting from the end of 1980s. As a result of construction in the coastal zone the relief morphology was disturbed, both lithodynamics and thermal regime of the permafrost within the areas of several km around the sites where gas pipeline crosses coastline was changed. At Yamal coast massive removal of deposits from the beach and tideflat took place. The morphology of barrier beach, which previously was a natural wave energy dissipater, was disturbed. This promoted inland penetration of storm surges and permafrost degradation under the barrier beach. At Ural coast the topsoil was disrupted by construction trucks, which affected thermal regime of the upper part of permafrost and lead to active layer deepening. Thermoerosion and thermoabrasion processes have activated on coasts, especially at areas with icy sediments, ice wedges and massive ice beds. Construction of cofferdams resulted in overlapping of sediments transit on both coasts and caused sediment deficit on nearby nearshore zone areas. The result of technogenic disturbances was widespread coastal erosion activation, which catastrophic scale is facilitated by climate warming in the Arctic.