Holistic approach using an integrated system for studies of the Svalbard ecosystem.

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The Arctic region is usually perceived as a pristine environment with limited anthropogenic influence. However, the Arctic and thus the Svalbard region are undergoing rapid climate changes, which are manifested in many ways, with the most prominent – Arctic amplification, temperature changes are over 3-times greater than the average for the Northern Hemisphere. It is expected that the environmental state of Svalbard, including sea waters around the archipelago, will reflect the situation in the Arctic in several decades from now. Therefore, this is a very important area to investigate, and since the changes effect the entire environment, our research must be interdisciplinary.

Starting 1 October 2018, at the Institute of Oceanology Polish Academy of Sciences, we are realizing a Ph.D. program, which presents a holistic approach to the description of environmental changes in the Svalbard region. The study involves creation of an integrated system to analyze environmental data,which have been collected in the Svalbard area by the Institute researchers over the past decades, with a special focus to the period 2013-2018. The novelty of this approach is that this system will facilitate the application of mechanisms for the combination of heterogeneous environmental data, which have been collected during the field studies, through defining of the association ontology between the data and the mechanisms of functional interconnections among data, with initial analysis of these interconnections. Such a dataset will facilitate more efficient search for environmental data as well as more complex description of the Svalbard ecosystem.