

Examples of Poland's cooperation (activity) in Russian Arctic science.

Latest activities:

1. Waldemar Walczowski, Arctic Science Summit Week, Archangielsk 22-30 May **2019**. Poster presentation "An increasing role of Argo floats in Arctic oceanographic observations".
2. Waldemar Walczowski, IX International Forum Arctic: Today and the Future, St. Petersburg, 5-7 December **2019**. Verbal presentation "An increasing role of Argo floats in Arctic oceanographic observations".
3. Agnieszka Beszczyńska Moeller, IX International Forum Arctic: Today and the Future, St. Petersburg 5-7 December **2019**. INTAROS presentation: Integrated Arctic Observing System.
4. Tadeusz Pastusiak (**2016**) Collection of scientific papers of Second international conference "Natural resources and integrated development of coastal areas of the Arctic zone", Arkhangelsk 2016, Scientific article "Competitiveness of the Northern Sea Route in view of uncertain information": 358-369.

Older activities:

5. Antarctic Biology Department Polish Academy of Sciences managed by Stanisław Rakusa-Suszczewski was conducting research in **2005** in the region of Barentsburg in cooperation with the Russian Federation. Polish scientists participated in Russian Glaciological Expedition (Institute of Geography Russian Academy of Sciences). This was related to comparative Arctic / Antarctic study of the invertebrate physiological response. Stanisław Rakusa-Suszczewski, Anna Kidawa, Marta Markowska and Tomasz Janecki took part in the research.
 6. Stanisław Rakusa-Suszczewski, as a representative of the Polish Academy of Sciences organized in **2006** together with Russian Academy of Sciences, a 2-week school of ecological research in the White Sea region and the Kola Peninsula in the area of Dalnye Zelentsy region, attended by 12 scientists of Antarctic Biology Department Polish Academy of Sciences and Institute of Biochemistry and Biophysics Polish Academy of Sciences.
 7. Department of Radiochemistry and Colloid Chemistry M. C. Skłodowska University took part, as members, in two polar expeditions organized by Murmansk Marine Biological Institute, Russian Academy of Science in summer **1991** and **1992**. They collected samples of soils, sediments and mosses from Dalnye Zelentsy region, Novaya Zemlya and Franz Joseph Land.
- Resulted publication: Andrzej Komosa, Marta Szymula, Jerzy Szczypa (**1994**) Preliminary study on determination of alpha emitting radioisotopes in the Barents Sea region, Department of Radiochemistry and Colloid Chemistry, Maria Curie-Skłodowska University, Wyprawy Geograficzne na Spitsbergen, UMCS, Lublin, 1994.

Publications related to Ice navigation and/or Northern Sea Route:

8. Pastusiak T (2020) Voyages on the Northern Sea Route, Monography, Springer International Publishing, 1st ed. 2020, XXXVIII, Print ISBN 978-3-030-25489-6: 279. <http://dx.doi.org/10.1007/978-3-030-25490-2>
9. Pastusiak T (2018) Planning independent transit voyages of vessel without ice strengthening through the Northern Sea Route [in Polish], Monography, Akademia Morska, Gdynia: 278.
10. Pastusiak T (2016) The Northern Sea Route as a shipping lane: Expectations and reality, Monography: 219. <https://www.scopus.com/record/display.uri?eid=2-s2.0-85017068338&origin=inward&txGid=c73627427d65cb2247e576d0fd68a9b5> .
11. Jurdziński M (2000) Planning the navigation in ice [in Polish], Monography, Wyższa Szkoła Morska, Gdynia: 192.
12. Duda D, Jankowski E, Kazanecki E (1970), Navigation in ice conditions [in Polish], Monography, Wyższa Szkoła Morska, Gdynia: 127.

Publications on climatology and / or ice cover in the Russian Arctic:

13. Many publications were written in **1996-2016** in this subject, mostly by climatologists in Problemy Klimatologii Polarnej in Polish language. There are: Ksenia Dobrowolska, Joanna Jankowska, Andrzej A. Marsz, Tadeusz Niedźwiedź, Tadeusz Pastusiak, Rajmund Przybylak Anna Styszyńska, Przemysław Wysztyński and Sławomir Zblewski.
14. Special attention should be placed on publication: Marsz AA (2015) Model of changes in the Arctic sea-ice extent (1979-2013) – variables steering the ‘minimalist’ model and their climatic significance, Problemy Klimatologii Polarnej, Warszawa, No 25 (2015):249-334.

Publications on Arctic social sciences and humanities:

14. A large quantity of publications were written **since 2009** year in this matter. There are mentioned few Authors only: Marek Czajkowski, Roman Czarny, Ryszard M Czarny, Piotr Graczyk, Joanna Grzela, Krzysztof Kubiak, Michał Łuszczuk, Tomasz Młynarski, Janusz Symonides, Ryszard Szypra, Łukasz Wojcieszak.

Special attention should be placed on publications:

15. Czarny R M (2013) The imperative High North. Opportunities and challenges, Trnava, Michal Vaško - Vydavatel'stvo.
16. Kubiak K (2013) New “players” from East Asia towards the Arctic in the first decades of the 21st century, in: Arctic at the beginning of the 21st century. Between cooperation and competition [in Polish], Ed. Michał Łuszczuk. Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej: 509–530.

17. Łuszczuk M, Justus D, Thomas J, Klok Ch, Gerber F (2015) Arctic Offshore Hydrocarbons and the European Union: More Constraints and Less Opportunities, in: The changing Arctic and the European Union. A book based on the report "Strategic assessment of development of the Arctic Assessment conducted for the European Union", Ed. Adam Stępień, Timo Koivurova and Paula Kankaanpää. Leiden: Brill / Martinus Nijhoff (Nijhoff Law Specials, Vol. 89): 137–162.

18. **Poland's commercial use of the Northern Sea Route**

Poland took place in the early years after World War II in attempt to commercial use of the NSR as an international transit corridor with the convoy of seven Polish vessels from Poland to China in **1956**.

Detailed research: Pastusiak T (2018) Ice conditions affecting passage of Polish vessels convoy though the NSR in 1956. Long-term ice forecasts and passage strategies. TransNav, the International Journal on Marine Navigation and Safety of Sea Transportation, Vol. 12, No. 1: 101-106, 2018 <https://doi.org/10.12716/1001.12.01.11>, direct link: <http://www.transnav.eu/files/Ice%20conditions%20affecting%20passage%20of%20Polish%20vessels%20convoy%20though%20the%20NSR%20in%201956%20Longterm%20ice%20forecasts%20and%20passage%20strategies,792.pdf>