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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Influence of Hydrometeorological Hazards and Sea Coast Morphodynamics onto Unique Coastal Vegetation Sites Development – *Cephalanthero rubrae – Fagetum* on Wolin Island (the Southern Baltic Sea)" *by* Jacek Tylkowski et al.

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The article undoubtedly deserves to be published. A very important research work. Both in the global context of trends in climate change and sea level rise. And also the interpretation and prediction of these phenomena for the southern Baltic Sea. The analyzes and interpretations performed are logical, methodically correct and well documented. They are based on own research and available source data. The reference

to literature is accurate and sufficient. Among other things, it is important that the reports of the Intergovernmental Panel on Climate Change (IPCC) were referred to. The conclusions are supported by the results. The importance of the content for research is significant. The advantage of the work is not only relying on own short analyzes of data sets. The authors also interpret commonly available archival data. Thanks to this, the interpretation is complete and credible. The authors analyze the data starting from 1960. These are the data of the Polish Institute of Meteorology and Water Management. The Polish Institute of Meteorology and Water Management operates in accordance with the World Meteorological Organization (WMO) guidelines. These are public data, obtained thanks to taxes from Polish citizens. Therefore, these data should be widely used in scientific research. The paper uses the commonly used phytosociological mapping method of a well-known Swiss phytosociologist and botanist Josias Braun–Blanquet. The so-called French-Swiss school or the Zurich-Montpellier school. The area of research has been correctly selected. It represents different morphological types of the coast and varied relative height and slope. The aspect also corresponds to the main course of the coastline SW-NE, WSW-ENE. The sites are characterized by different morphodynamics, different thickness of glacial sediments and aeolian deposits. Sea Erosion Rate results are available for most test sites since 1984. The presented test results are representative. Although the work concerns endemic phytocoenoses Cephalanthero rubrae-Fagetum, the research results are universal. They can be related to other areas of the South Baltic Sea. To the areas of cliffs with glacial genesis. A diverse team of authors allowed for a broad interdisciplinary approach to the presented issue. They were taken into account biotic and abiotic components of the environment. This is the right decision because in a given area, besides the well-known land-atmosphere interactions, the marine factor plays an important role. The authors proved, inter alia, there is a trend towards an increase in the average annual temperature of 0.3 degrees for every 10 years. They also showed that the trend for sea level rise in this area is 2 cm every 10 years. It is also important that the annual sums of atmospheric precipitation do not show statistically significant trends. Another

advantage of work is forecasting. The authors show which factors will have a greater impact on the range of Cephalanthero rubrae-Fagetum occurrence in the future.

Suggestions If the editor doesn't mind posting photos, it's worth adding photos of some endemic species from Cephalanthero rubrae-Fagetum. Question Winds from the W and NW directions dominate in the study area. Can it be assumed that the cliff recession rate in section VI (WSW-ENE) is lower than in sections I to V (SW-NE)? Or susceptibility to wind direction is less important than other factors?

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