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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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General Comments

This is a valuable article and should be published in Natural Hazards and Earth System Sciences. The main aim of this elaboration was the up-to-date evaluation of the reach and floristic composition of Cr-F, and possible growth of this exceptional phytocoenosis, in the context of climate changes and morphodynamics of cliff coast. I believe that the

aim of the work has been achieved to a good degree. This article shows a good understanding of the authors of the geomorphological processes of the sea shore under the influence of extreme hydrological and meteorological factors. Additionally, the authors have extensive biological knowledge of the characteristics and formation of coastal ecosystems (Cephalanthero rubrae - Fagetum phytocoenosis). I consider it interesting and important that the authors emphasize the role of eolian processes in the formation of coastal phytocoenosis on the cliff. The conclusion of the article is accurate and relevantthe - optimal condition for the development of Cr-F is the balanced cliff's dynamics (it means- cliff top retreats with a small, but stable rate of up to, approximately, 0.15 m/yr).

The authors of the article should only pay attention to the minor corrections I am presenting below.

Specific Comments

1. The authors of the study identified interesting climatic indicators (AI, EQ, FAI, MT). However, they were not well described. Please complete the formulas of these indicators. Please write how the value of a particular indicator influences the development (growth) of Fagus Silvatica.

2. Please explain this contradiction:

The authors wrote in the results (lines 181-184): "In the last 60 years, the AI, EQ and MT indicators confirm long-term trend of worsening climatic conditions for Cr-F (Fig. 4). The proven long-term regularities of these indicators suggest worsening thermal and precipitation conditions for the researched forest phytocoenosis in subsequent years of the 21st century."

The authors wrote in the conclusion (lines 286-288) "Analysis of climatic indicators AI, EQ and FAI in the last 60 years have not evidenced a trend of unfavorable climatic conditions clustering, and the occurrence of unfavourable thermal and precipitation

conditions was of random character."

3. Please add short words :

The authors wrote in Abstract (lines 19-21): "It has been established that in the 21st century, a relatively larger hazard to the functioning of the researched site are climate changes, not the sea coast erosion".

Please complete the conclusion - climatic changes, ie changes in thermal and precipitation conditions. Because increasing coastal erosion may also be a result of climate change. The same authors wrote in their conclusions (lines 295-296): "As a result of global warming, the sea level rises, and in the future, this may be the cause of an intensified coastal erosion.

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