Submitted Abstract

ID IMC22-FSAbstr- 788

First Author First Name Last Name	 Dariia Kholiavchuk
Submitting Author First Name Last Name	 Dariia Kholiavchuk
Correspondence	d.kholyavchuk@chnu.edu.ua
Co-Authors **>> E-Mails will be not listed**	Zelenchuk, Volodymyr; Pasichnyk, Mykola
Organisations	Yuriy Fedkovych Chernivtsi National University, Ukraine
Country	Ukraine
Region	Eastern Europe
Title	Slope Processes In The Forest Ecosystems Of The Ukrainian Carpathians (Chornohora And Borzhava Massifs) Linked To Climate Change.
Keywords	Natural Hazards, Carpathian Mountains, Climate Change, Slope Processes, Forest Ecosystems
Type	List Of Focus Session
Focus Session ID	12

Abstract

Recent climate change in the Ukrainian Carpathians has contributed to the intensity and reoccurrence of geomorphological processes. Latter has in turn changed the vertical distribution of mountain ecosystems. Forest ecosystems together with air temperature and precipitation characteristics serve as apparent indicators of the processes. Accordingly, the study aims to identify spatiotemporal features of snow avalanche processes, landslides, rockfalls using bioindication in the focus areas of the Chornogora and Borzhava massifs in the Ukrainian Carpathians, hydrometeorological data from two weather stations Play and Pogegevskaya in the years of 1961-2015 and evidence from the local residents.

Assessment of eight focus areas in the Chornohora massif and two in the Borzhava massifs are provided based on the surveys of the Bystrets local residents and the detected deformations and damages of forest formations. The most intensive events of snow avalanches were distinguished in 1977, 1995, 1998 and 2001. These avalanche events have caused the greatest changes in the forest ecosystems of the central part of the Chornohora.

The ecosystem changes impacted by snow avalanches involve the replacement of forest ecosystems with shrubs and the loss of valuable ecosystems. Other geomorphological processes linked to the forest ecosystem destabilization are landslides and rockfalls studied in the field expeditions in 2019-2021. The latter contributes to the climate change interpretation. An increase in precipitation and temperature extremes are found the dominant hydroclimatic triggers of slope instabilities in the area. In particular, Major snow avalanches are associated with the warm spells from the Mediterranean or local radiation warming of the surface air layer.

Identified damaged coniferous formations have become the raw data for the ongoing dendrogeomorphological studies. They involve dendrogeomorphological reconstruction of slope processes together with synoptic analysis aimed at the climate change interpretation of the hazard events in the years 1961-2015.