ACM International Conference Proceeding Series • *Open Access* • Pages 155 - 161 • 14 September 2022 • 19th International Conference on Content-based Multimedia Indexing, CBMI 2022 • Graz • 14 September 2022through 16 September 2022 • Code 183204

Ecological Impact Assessment Framework for areas affected by Natural Disasters

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Document type
Conference Paper • *Bronze Open Access*
Source type
Conference Proceedings
ISBN
978-145039720-9
DOI
10.1145/3549555.3549596
View more

Abstract

The forest's biodiversity consists of relations between trees, animals, the environment, and surrounding communities. Their existence required a certain balance both in number and composition. The diversity of the element itself creates a chain that connects each of the living things. Consistently, those mutual relationships are sometimes disturbed by pressures, whether man-made pressures or natural pressures. As a consequence of that event, the biodiversity loses its balance and becomes vulnerable to disaster. The fact that forest fire cases damage every living thing in the forest is becoming a massive issue in forest management. In some instances, the balance of forest biodiversity assembles an ecological resilience essential to the forest condition in combating disturbance. This paper reviews the biodiversity elements and their relationship to the extent to which elements will support ecological resilience. This is a review of 58 studies related to biodiversity balance and ecological resilience. The review discovered evidence that biodiversity components are connected and support each other. However, not every relation contributes to ecological resilience. As a result, we assess several biodiversity elements that might be useful in supporting ecological resilience, which are tree, environment, animal, and community. We also provide 2 case examples case to get the value of some biodiversity elements using a deep learning method. © 2022 ACM.

Author keywords

biodiversity; deep learning; ecological resilience; forest fire; forest management