



## **Assessing relationships between forest structure and soil erosion in mountainous forest using a Cesium-137 tracer technique**

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The fallout radionuclides (FRNs) particularly Cesium-137 are known as a quantitatively reliable means of estimating sediment redistribution rates within agricultural landscapes and forested area. However, fewer studies have done using FRNs in forested areas even though understanding soil redistribution patterns in mountainous forest areas is one of the important issues for forest management. The objective of this study is to figure out key forest structures affecting soil redistribution rate. In this study, we estimated soil loss and gain rate at 50 points with various forest types and topography in steep mountainous forest area in the Experimental Forest of Kangwon National University in Kangwon Province, South Korea by the Cesium-137 tracing technique. The results show the factors related to the topography such as slope and water accumulation have little effect on soil redistribution rate. The shrub and small tree layer affect more on soil redistribution rate. Additionally, the data shows relatively higher erosion rate in Korean Pine tree plantation area (*Pinus koraiensis* Sieb. et Zucc.) than semi-natural deciduous and Quercus forests where shrubs and small trees are more prevalent.