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海岸山脈北段公路沿線地質特性與邊坡崩塌關係

孫維芳[1]　　陳紫娥[2]

摘　　要　台灣東部多颱風地震而爲崩山好發區，不僅肇致生命財產的損失，亦影響公路行旅的安全。本研究以東部海岸山脈北段三條公路沿線邊坡爲研究對象，蒐集公路局歷年來公路崩壞的歷史記錄，以及所處的地形、地質條件，分析邊坡崩塌與地質特性的關係。研究結果顯示：(1)崩塌發生的誘發因子主要爲降雨，而肇致崩塌之規模與頻率則以地質因素爲最，兩者關係密切；(2)崩塌量在 200m³ 以上之崩塌事件，其崩塌規模與以上發生頻率呈對數相關；(3)都巒山層之安山岩質崩移岩塊具有大規模與高頻率之崩塌潛在性，八里灣砂頁互層分佈區則以小規模、高頻率之崩塌爲主；(4)同類岩層分佈區卻有高頻率發生崩塌之區段，推論受花蓮溪本流與其支流之互動關係的影響。

關鍵詞：公路、邊坡崩塌、地質特性。

Geologic Characteristics of Roadside Landslides of Northern Coastal Range

Wei-Fang Sun[1]　Zur-Er Chen[2]

ABSTRACT　Eastern Taiwan is a landslide-prone region. The landslides caused by typhoons, heavy rainfall, or earthquakes not only paralyze traffic, but also cause severe property damage, and more often than not take lives. The major objective of this study is to set up a database for the area nearby three highways (the 11th provincial highway, the 193rd county highway, and the 11th-I provincial highway) of the northern Coastal Range in Taiwan, by collecting and analyzing the corresponding information from topographical maps, geological maps, and disaster records (1995-2001) provided by the Taiwan Highway Bureau, as well as from field investigation. The database is used to examine the association of landslides with geology characteristics. The conclusions of this research are as follows. (1) Rainfall was the common initiating cause of landslides, but geological factors were the significant underlying causes. (2) Landslides with a failure volume more than 200 m³ have a cumulative frequency-size distribution with a power-law dependence on volume of failure. (3) The main sources of the landslide-prone formations are Transported Andestic Blocks (b) and Paliwan Formation Suilien Member (Pls). (4) The interaction between main and tributary streams was a specific cause to influence slop failure.

Key Words: highway, landslide, slope failure.

〔1〕國立中央大學地球科學學系教學助教(通訊作者)
Teaching assistant, Department of Earth Science, National Central University, Tao-Yuan 320, Taiwan, R. O. C. (Corresponding Author)
E-mail: esta@escc.gep.ncu.edu.tw
〔2〕國立東華大學自然資源管理研究所教授
Professor, Institute of Natural Resources, National Dong Hwa University, Hualien 974, Taiwan. R. O. C.