

Characteristics of earthquake-induced landslides in granitic mountains of Northern Ibaraki, Japan

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The 2011 earthquake off the Pacific coast of Tohoku and a series of aftershocks triggered continually landslides in granitic mountains of Northern Ibaraki. We confirmed total 41 new landslides with satellite images of Google Earth taken immediately after the main shock and with field surveys from May to November 2011. We inferred that 30 landslides were triggered by main and aftershocks from March 11 to April 11, and the rest 11 landslides were induced by the combination of heavy rainfall by typhoon and an aftershock on September 21. Distribution of slope for the earthquake-induced landslides (March 11 to April 11) was bimodal, reflecting the difference of the slid material between rock and soil. The half of the landslides induced by the main shock (March 11) slid toward SSW to WSW. Although the direction of maximum acceleration was not strongly concentrated to SW at the KiK-net station of Takahagi, characteristics of the seismic wave of the main shock may influence the uneven distribution of direction.

Keywords: The 2011 earthquake off the Pacific coast of Tohoku, landslide, granitic mountains, Ibaraki