A general landslide distribution: Further examination

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Large numbers of landslides can be associated with a trigger, i.e. an earthquake or
a large storm. We have recently hypothesized (*Earth Surf. Proc. Landforms* **29**:687,
2004) that the frequency-area statistics of landslides triggered in an event are well
approximated by a three-parameter inverse-gamma distribution, irrespective of the
trigger type. The use of this general distribution was established using three substan-
tially complete and well-documented landslide event inventories: 11,000 landslides
triggered by the Northridge California Earthquake, 4,000 landslides triggered by a
snowmelt event in the Umbria region of Italy, and 9,000 landslides triggered by heavy
rainfall associated with Hurricane Mitch in Guatemala. In this paper, we examine
further this general landslide distribution by using an inventory of 165 landslides trig-
gered by a rainfall event in the region of Todi, Central Italy. Our previous studies have
shown the applicability of our general landslide distribution to events with 4,000–
11,000 landslides. This smaller inventory provides a critical step in examining the
applicability of the general landslide distribution. We find very good agreement of the
Todi event with our general distribution. This also provides support for our further
hypothesis that the mean area of landslides triggered by an event is approximately
independent of the event size.