

Distribution of Geomorphic Features in Shihmen Reservoir Watershed, Taiwan

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Geomorphic features such as knickpoints, knickzones, terraces, slope breaks and paleosurfaces are widely distributed in Shihmen reservoir watershed, northern Taiwan. Their distribution is closely associated with the history of river rejuvenation in response to base-level lowering associated with tectonic uplift of the area. Base level changes leave the local landscape in disequilibrium. Landscapes respond to base level lowering via upstream propagation of knickpoints through trunks and its tributaries. Corresponding to the successive river incisions by rejuvenation, paleosurfaces have been dissected and slope breaks have been made.

Many of the knickpoints display correlative elevations and knickpoints in the tributaries are correlative with knickpoints in trunks, supporting the interpretation of the pre-incision profiles. Seventy-six percent of knickpoints are on second to first-order streams. Some of the higher or lower slope breaks correspond to knickpoints on rivers. The lower slope breaks appear to grade to the terraces traced several tens to a few hundred meters above trunk channels associated with the most recent base-level lowering. Selected-profiles of third-to first-order streams commonly display

prominent knickzones beginning at confluences with trunks.