

Changes in earth-surface environments after the 1995 Kobe Earthquake on the basis of pond-catchment information

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Lake-catchment systems may give a key to understand cause and effect in past physical environments because current sediment information (sedimentation) can be compared to present observation in the systems; environmental information, especially catchment one, may be causally connected with observational data, which means that past information recorded in sediments has a possibility to be properly interpreted.

Continuous observation in a pond-catchment system (Kawauso-ike, Kobe) after the 1995 Kobe Earthquake shows some interesting results as follows; shaking during the earthquake caused surface material to be more mobile in catchment areas in the Rokko mountains, Kobe where there are some active fault lines. As a result, there were many landslides associated with the earthquake. The sedimentation rate in a pond in the mountains increased several fold, then exponentially decreased with seasonality over several years. Since 2001 there seems to have been little marked surface movements related to the earthquake, even though the sedimentation rates increased and decreased slightly. Previous steady state for the structure of earth-surface may be reestablished.