Verification of identification criteria for tsunami deposits using historical tsunami deposits with known features (1) 7 years passed deposit in a coastal forest

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In order to utilize paleotsunami deposits, it is necessary to establish a procedure for the identification of tsunami deposits (e.g., Goto et al., 2017). The criteria have been proposed in the perspective of modern analogs. On the other hand, it is known that tsunami deposits are affected by various weathering after deposition, and their characteristics change or disappear over time. Such weathering depends also on the environment where it was deposited. The purpose of this study is to verify the identification criteria of tsunami deposit using historical tsunami deposits whose features are known and to find out their application limits. As a procedure, the distribution, sedimentary structure, geochemical traces, and biological traces of the target tsunami deposits are examined using general paleo-tsunami deposit survey methods. In addition, characteristics of soil characteristics, topography, and vegetation are also confirmed. Since it is necessary to examine the historical events of various environments and ages, a series of various cases with different locations (environments) and elapsed years is being considered. In this presentation, the first case study was conducted on the 2011 tsunami deposit formed on the Misawa Coast in Aomori Prefecture, 7 years ago. This tsunami sediment clearly showed the distribution characteristics such as inland thinning and inland fining, and the characteristics of the sedimentary structure such as upward fining, erosional contact and Riu-up clasts. The microfossils also proved to be sufficient to show that they were marine sediments. On the other hand, it was found that sand particles diffused into the soil above the tsunami deposit.

Keywords: tsunami deposit, identification criteria, weathering, Misawa coast, the 2011 Tohoku tsunami