

## Marine tephra as an important tool for paleoceanography and paleoclimatology

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Tephra is a product of volcanic eruption, and volcanic ash, which is thought to be geologically synchronous, is an important key bed to connect the events found in lacustrine and marine sequences. Tephra grain is an important component of marine sediments, especially around the volcanic islands such as the Japanese islands. Tephra grains have been supplied to marine environments not only directly by the volcanic eruptions as fall tephra, but also by erosion of terrestrial and marine beds. Fall tephra is an important tool to identify relationship among the environmental changes found in terrestrial, lacustrine and marine environments. Exact correlation of regional climatic events is extremely important to understand global climatic changes. Comparison of terrestrial and marine radiocarbon ages of the same tephra provides us information on the local reservoir effect. Because the local reservoir effect is influenced by ventilation and ocean circulation, regional reconstruction of local reservoir effect is useful for understanding the three dimensional ocean circulation changes in the glacial and deglacial oceans.

Keywords: tephra, marine sediments, marine reservoir effect, environmental change, key bed