

Transfer of fallout radiocaesium from catchment to coast in the region impacted by the Fukushima nuclear accident

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There is considerable concern about redistribution of radiocaesium from catchment soils to the coastal zone via river networks in the region impacted by the Fukushima Daiichi Nuclear Power Plant accident. This poster reports the magnitude of fluvial transfer of Cs-134 and Cs-137 through river networks located across the fallout region from June 2011 to present. Data from 30 sites provide a regional-scale measure of fallout radiocaesium transfer by river networks to the coastal zone. Study catchment areas range from 8 to 5,172 square kilometers and span a large range in average radiocaesium catchment inventories based on MEXT inventory mapping. Flow and turbidity (converted to suspended sediment concentration) were measured at river gauging stations (n=30) while bulk suspended sediment samples were collected at regular intervals using time-integrated samplers to allow measurement of Cs-134 and Cs-137 activity concentrations by gamma spectrometry. Preliminary data explore the relationship between catchment inventory and sediment activity concentration. In the context of high resolution river monitoring data, this permits exploration of the interplay between suspended sediment loads and levels of contamination on the total flux and regional-scale variability of transfer to the coastal zone.

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