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Development and Dynamics of Turbid Water in Lotic and Lentic Ecosystems in Korea

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This study brings in the problems of turbid water (TW) and the importance of its management in Korean freshwater ecosystems, by evaluating the development and dynamics of TW in various Korean rivers and reservoirs. The occurrence and magnitude of TW varied both temporally and spatially, with the peaks during the summer Monsoon period. Especially, TW was correlated with the intensity of precipitation, which resulted in different patterns of development in lotic and lentic systems. The regions with the potential soil erosion appeared to be a major source of TW, such as forest area, agricultural area, residential area, construction area, and river itself. The mechanism and magnitude of TW transportation differed between rivers and reservoirs. Major factors related with them included dammed pools, riverbank and adjacent road construction, river dredging and tributaries in the river system. While hydrological factors were most influential in the reservoir system, being divided into river-type and reservoir-type. These two types in the reservoir system reflected its structure and operation, and sediment particle distribution and gradient evidently differed between upstream and downstream. More rigorous approach both on the scientific and applied aspects of TW is required for the restoration and sustainability of the river ecosystem in Korea.