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ナミブ砂漠クイセブ川流域における人為的な水文環境変化による河畔植生への影響

The Influence of human-induced hydrological change on the riparian environment of the Kuiseb River in the Namib Desert,

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Ephemeral rivers are very important for the riparian vegetation and ecosystem in arid and semi-arid area. However, growth of human population in arid environment has led to greater pressure on the ephemeral rivers. For the conservation of watershed environments, it is important to examine the relationship between the riparian environment and hydrologic condition of the river. The decline of riparian forest and !Nara vegetation is recognized along the middle and lower reaches of the Kuiseb River in the Namib Desert. We investigated the flood plain deposits of the middle reach of the Kuiseb River in order to reveal the recent fluvial environment changes and forest decline. Grain size coarsening was seen in the flood plain deposits surface in many places. The cause of the deposit coarsening was considered to be a relative increase in the supply of coarse material. The frequency of floods seems to be have been decreased by the construction of many dams in the upper stream area, but sand dunes continue to advance on the river bed. This situation induces the increasing of relative supply rate of coarse material (dune sand). As such coarse deposits cannot retain water and are desiccated rapidly; the subsequent severe dry conditions at the roots induce tree death. The hydrologic condition change also affects the environment of the lower reach of the Kuiseb River. The recent increase and enlargement of sand dunes were recognized on the flood plain and the Kuiseb Delta area. The enlargement of the sand dune induced the serious decline of the !Nara plant, which is essential natural resource of the indigenous people (Topnaar).Such phenomenon is also supposed to be related to the increase of the sandy material supply and decrease of the flood frequency.

キーワード:ナミブ砂漠,クイセブ川,季節河川,植生衰退,人為的水文環境変化,氾濫原堆積物

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