



Sedimentary archives of fire, vegetation history, and human impacts during the late Holocene in the eastern lowland of Taiwan

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The Hualien Plain is one of the richest prehistoric sites in eastern Taiwan, and the reconstruction of late Holocene environment on the basis of the lacustrine sediments near Hualien Plain can benefit to the understandings of human-climate-environment interactions in past. The multi-decadal records of vegetation history, agriculture evidences and fire events in Liyu Lake of eastern Taiwan were reconstructed by using palynological and charcoal analysis of lake sediments. A 2.8 m sediment core covering a time period from 2,680 cal BP to the present was used to investigate the alterations in the landscape with respect to human activities and climate change. During 2680-2410 cal yr BP, frequent burning and high preservation of cultivated Poaceae pollen indicated the early cultivation during the late Neolithic period. There followed a warm climate during 2,410-1,510 cal yr BP, and the increase of lowland forest pollen showed a period of forest recovery as a consequence of reducing human activity. Following a phase of recolonization of prehistory human during 1510-560 cal yr BP, a slightly increasing trend of cultivated Poaceae indicated the human activities, but the human population was low. The last 560 years record showed an intense trend of deforestation and cultivation which may correlate to a rapid increase in the human population in this area.