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The Distributions and Ages of the Fluvial Terraces in the Haseocheon Drainage Basin in the Southeastern Part of Korea

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1. Introduction

The Haseochon is a small stream (main trunk length: 15 Km, drainage basin areas: 43㎢), flows to the East Sea in southeastern part of the Korean peninsula. The bedrocks of the drainage basin are composed of Tertiary sedimentary (NW upper reaches), Cretaceous sedimentary (middle reaches) and Tertiary volcanic rocks (SE lower reaches).

2. Distributions and ages of the fluvial terraces and geomorphic surfaces

The geomorphic surfaces in the Haseochon drainage basin are classified as LT(lower terraces), MT (middle terraces) and tfT(thalassostatic fluvial terraces). The thalassostatic fluvial terrace Lower 1 surface(tfLT1) is elongated to the marine terrace(the ancient shoreline: 18 m (asl)). The age of tfLT1 is inferred as ca. 120 ka. (the earlier half of the Last Interglacial) and LT as the Last Glacial.

3. Uplift rate inerred from the longitudinal profiles

The relative height of the climatic terrace Lower 1 surface (cfLT1) is 15-20 m, while that of the climatic terrace Lower 2 surface (cfLT2) is 5-10 m. If the forming age of cfLT1 is assumed as 50 ka BP and for cfLT2 as 20 ka BP, the uplift rate of cfLT1 is inferred as 0.3-0.4 m/ka, and for cfLT2, 0.25-0.5 m/ka.

Those uplift rates are higher than the rates of the climatic terraces in the intermontane basins (0.14 m/ka; Chang, 1987), and the Lower fluvial terraces of upper reaches of the Namhan-river (0.2-0.25 m/ka; Song, 1998) in Korea.

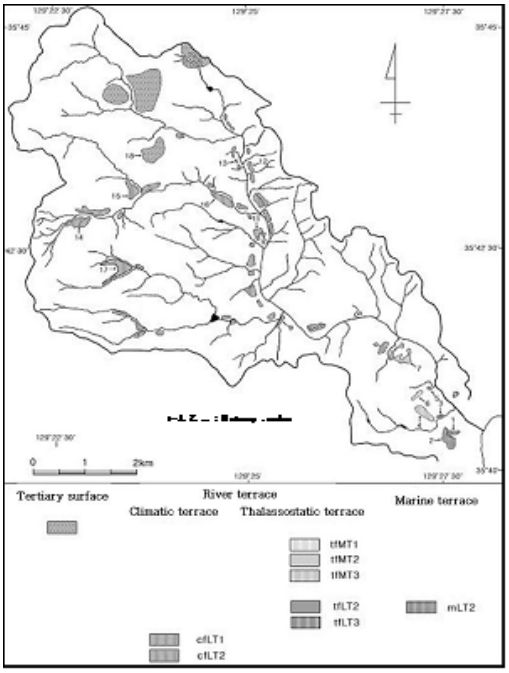

Fig 1. Terrace distribution along the Haseocheon drainage basin.

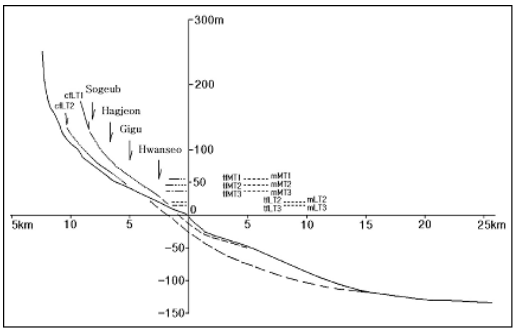

Fig 2. The longitudinal profiles of the present stream bed of the Haseochon main trunk, the fluvial terraces and the submarine surfaces.

Table 1. Geomorphic chronology of coastal terraces along Haseocheon drainage basin

Age			Fluvial Terrace Surface	Marine Terrace Surface(above paoleoshoreline)	Chronology (ka. BP)	Marine isotope stage
Quaternary	Holocene		Alluvial plain	(m)	10	1
	Pleistocene	Late	cfLT2	-120	30	2 ~ 4
			cfLT1	-50	70	
			tfLT3	10		5
			tfLT2	mLT2 18	130	
		Mid	tfMT3	36	190 250	7
			tfMT2	45	300 340	9
			tfMT1	55	350 430	11
Tertiary			Tertiary Surface			

[cf : Climatatic terrace, tf : Thalassostatic terrace, m : Marine terrace, LT : Low terrace, MT : Middle terrace]
reference : Kim J. Y.(1998), Yun S.O.(1999), Choi S.J.(2003), Choi S.G.(1998)

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