

## Supplementary material

## Estimation of Streamflow with Incomplete Soil Dataset in Krasioa Basin using Soil-Landscape Evaluation Approach and SWAT Model

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**Table 1** Soil physical properties predicted by SLEEP: soil thickness in cm, percent of organic matter (OM), fraction of clay particle (CLAY), and fraction of sand particle (SAND)

(a) Data from the Land Development Department

	Thickness (cm)	OM (%)	CLAY (%)	SAND (%)
Mean	156.89	1.48	26.16	40.86
Min	20.00	0.00	1.00	1.50
Max	300.00	4.83	84.60	89.50

(b) Prediction using the soil-landscape evaluation approach (SLEEP)

	Thickness (cm)	OM (%)	CLAY (%)	SAND (%)
Mean	166.57	1.11	21.25	39.20
Min	88.26	0.06	3.90	4.65
Max	233.27	3.17	37.57	75.10

**Table 2** Soil physical properties predicted by ROSETTA: bulk density in  $\text{g cm}^{-3}$  (BD), available water content in  $\text{mm mm}^{-1}$  (AWC), and saturated hydraulic conductivity in  $\text{mm h}^{-1}$  (SOL\_K)

(a) Data based on the Land Development Department

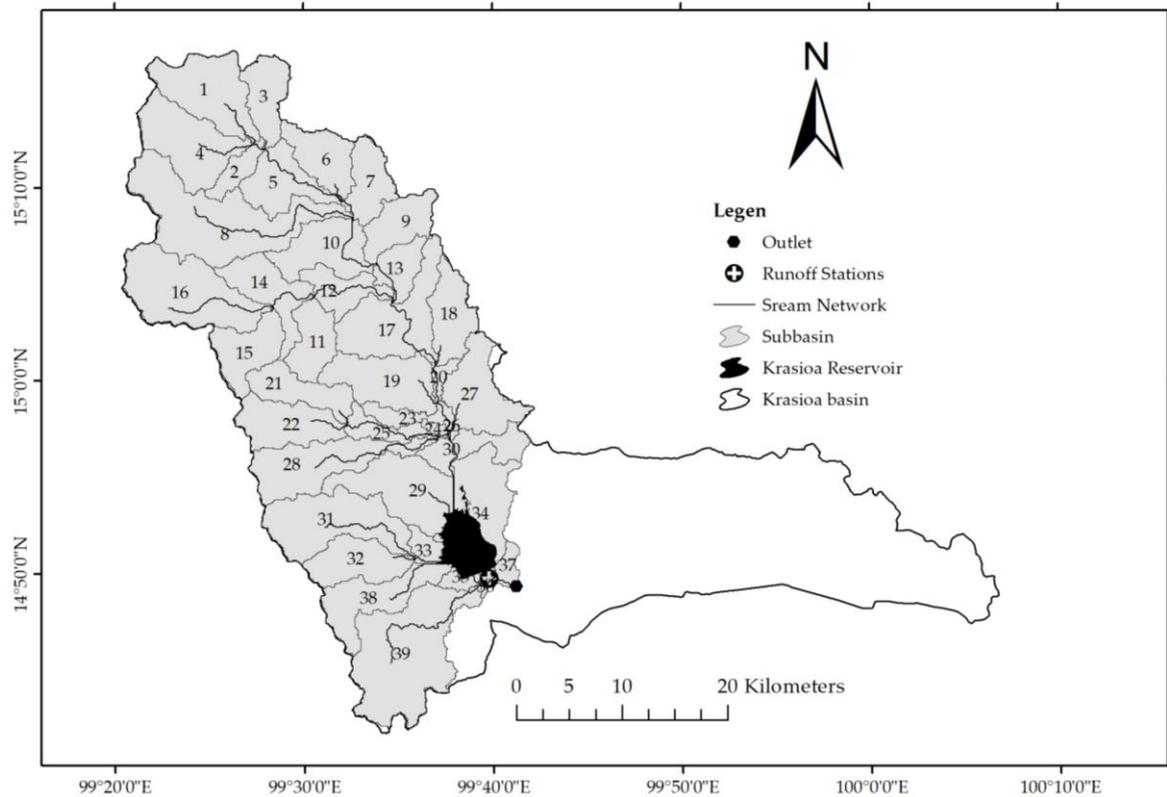
	BD ( $\text{g cm}^{-3}$ )	AWC ( $\text{mm mm}^{-1}$ )	SOL_K ( $\text{mm h}^{-1}$ )
Mean	1.52	0.14	103.76
Min	1.40	0.11	3.70
Max	1.60	0.20	526.8

(b) Prediction using the pedo-transfer function (ROSETTA)

	BD ( $\text{g cm}^{-3}$ )	AWC ( $\text{mm mm}^{-1}$ )	SOL_K ( $\text{mm h}^{-1}$ )
Mean	1.51	0.16	103.63
Min	1.35	0.13	2.20
Max	1.68	0.19	420.00

**Table 3** Soil physical properties of the Slope Complex (SC): (a) properties assumed as medium texture in LDD dataset (Soil-LDD), and (b) properties predicted using the soil-landscape evaluation approach (Soil-SLE)

Method	Thickness (cm)	OM (%)	CLAY (%)	SILT (%)	SAND (%)	BD (g cm <sup>-3</sup> )	AWC (mm mm <sup>-1</sup> )	SOL_K (mm h <sup>-1</sup> )
Soil-LDD	100.00	1.0	10.0	29.0	60.0	1.50	0.12	125
Soil-SLE	117.86	1.5	20.1	28.3	50.1	1.46	0.16	150



**Figure 1** Boundary of sub-basins located in the upstream of Krasioa Reservoir.