Online Resource 1

Title: Beyond landscape composition: configuration and landscape context shape sediment retention and delivery

Journal: Landscape Ecology

Authors: Leting Lyu, Yan Niu, Mengjiao Hou, Defeng Zheng*, Feipeng Ren

*Corresponding authors: Defeng Zheng, College of Geosciences, Liaoning Normal University, Dalian 116029, China. Email: defengzheng@lnnu.edu.cn;

Feipeng Ren, Changjiang River Scientific Research Institute, Changjiang Water Resources Commission, Wuhan 430010, China. Email: feipengren2006@mail.bnu.edu.cn

Online Resource 1. Associations between long-term land-use background and subbasin-specific effects of key landscape metrics

Response	Subbasin-specific effect	Land-use background	Spearman ρ	p	FDR q
SRSR	Impervious_LPI	Impervious_PLAND	**−0.656**	<0.001	**0.0023**
	Forest_PLAND	Forest_PLAND	**0.606**	<0.001	**0.0047**
	L_PD	Impervious_PLAND	**0.513**	0.0052	**0.0213**
	L_PD	Grassland_PLAND	**−0.509**	0.0057	**0.0213**
	Impervious_AI	Impervious_PLAND	0.440	0.0191	0.0573
	Impervious_COHESION	Impervious_PLAND	−0.419	0.0266	0.0624
	Impervious_ED	Impervious_PLAND	−0.407	0.0317	0.0624
	Impervious_PLAND	Impervious_PLAND	−0.403	0.0333	0.0624
	L_PD	Forest_PLAND	0.323	0.0931	0.1552
	Cropland_ED	Cropland_PLAND	0.280	0.1495	0.2242
	L_PD	Cropland_PLAND	0.270	0.1649	0.2249
	Cropland_PLAND	Cropland_PLAND	−0.159	0.4182	0.5227
	Forest_LPI	Forest_PLAND	−0.121	0.5406	0.6238
	Forest_PD	Forest_PLAND	0.066	0.7377	0.7503
	Cropland_PD	Cropland_PLAND	0.063	0.7503	0.7503
SDR	Impervious_ED	Impervious_PLAND	0.513	0.0053	0.0709
	Forest_PLAND	Forest_PLAND	−0.482	0.0095	0.0709
	Impervious_PLAND	Impervious_PLAND	0.407	0.0317	0.1587
	Impervious_COHESION	Impervious_PLAND	0.347	0.0704	0.2641
	Impervious_LPI	Impervious_PLAND	0.317	0.0997	0.2992
	Cropland_PLAND	Cropland_PLAND	−0.282	0.1462	0.3654
	L_PD	Forest_PLAND	−0.223	0.2533	0.5211
	L_PD	Impervious_PLAND	−0.212	0.2779	0.5211
	Cropland_ED	Cropland_PLAND	−0.190	0.3316	0.5329
	L_PD	Grassland_PLAND	0.166	0.3974	0.5329

Response	Subbasin-specific effect	Land-use background	Spearman ρ	p	FDR q
	Impervious_AI	Impervious_PLAND	0.164	0.4037	0.5329
	Cropland_PD	Cropland_PLAND	−0.157	0.4263	0.5329
	L_PD	Cropland_PLAND	−0.108	0.5830	0.6727
	Forest_LPI	Forest_PLAND	−0.094	0.6347	0.6800
	Forest_PD	Forest_PLAND	−0.050	0.7991	0.7991