Online Resource 2

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

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Online Resource 2. Complete TWFE-RCS results for the 24 relationships between key landscape metrics and sediment responses

Metric	Type	Response	Overall F	Overall p	Overall q	Nonlinear F	Nonlinear p	Nonlinear q	Q5–Q95 Δ, pp (95% CI)
Forest_PLAND	Comp.	SRSR	36.638	<0.0001	**<0.0001**	4.952	0.0147	0.0589	+1.928 (1.443, 2.413)
		SDR	15.062	<0.0001	**<0.0001**	3.413	0.0477	0.1144	−1.642 (−2.371, −0.913)
Cropland_PLAND	Comp.	SRSR	0.891	0.4583	0.5000	0.645	0.5327	0.6088	−0.217 (−0.626, 0.192)
		SDR	4.325	0.0130	**0.0207**	0.520	0.6002	0.6548	+0.725 (0.183, 1.268)
Impervious_PLAND	Comp.	SRSR	5.010	0.0069	**0.0150**	7.409	0.0027	**0.0284**	+0.741 (0.128, 1.354)
		SDR	7.276	0.0010	**0.0048**	8.549	0.0013	**0.0284**	−0.988 (−1.841, −0.135)
Forest_LPI	Config.	SRSR	0.228	0.8761	0.8761	0.339	0.7153	0.7464	−0.112 (−0.581, 0.358)
		SDR	3.635	0.0253	**0.0357**	1.572	0.2261	0.3192	−0.461 (−1.319, 0.398)
Forest_PD	Config.	SRSR	0.417	0.7423	0.7745	0.027	0.9730	0.9730	−0.101 (−0.288, 0.086)
		SDR	1.195	0.3305	0.3777	0.680	0.5153	0.6088	+0.316 (−0.079, 0.710)
Cropland_ED	Config.	SRSR	7.005	0.0012	**0.0050**	6.366	0.0054	**0.0326**	−0.246 (−0.412, −0.080)
		SDR	3.761	0.0224	**0.0335**	2.462	0.1042	0.1924	+0.309 (0.097, 0.522)

Metric	Type	Response	Overall F	Overall p	Overall q	Nonlinear F	Nonlinear p	Nonlinear q	Q5–Q95 Δ, pp (95% CI)
Cropland_PD	Config.	SRSR	5.270	0.0054	**0.0130**	5.581	0.0094	**0.0450**	−0.080 (−0.317, 0.157)
		SDR	2.818	0.0579	0.0772	1.911	0.1674	0.2511	+0.160 (−0.099, 0.420)
Impervious_LPI	Config.	SRSR	4.828	0.0081	**0.0150**	3.254	0.0542	0.1182	+0.114 (−0.347, 0.574)
		SDR	2.667	0.0678	0.0856	3.952	0.0312	0.0937	−0.495 (−0.898, −0.092)
Impervious_AI	Config.	SRSR	9.095	0.0003	**0.0015**	4.026	0.0295	0.0937	+0.216 (−0.215, 0.646)
		SDR	4.850	0.0079	**0.0150**	3.757	0.0363	0.0969	−1.039 (−2.041, −0.038)
Impervious_COHESION	Config.	SRSR	4.650	0.0096	**0.0164**	2.171	0.1336	0.2137	+0.255 (−0.010, 0.520)
		SDR	2.407	0.0892	0.1070	2.293	0.1203	0.2061	−0.463 (−0.820, −0.107)
Impervious_ED	Config.	SRSR	19.744	<0.0001	**<0.0001**	1.427	0.2576	0.3329	+1.421 (0.962, 1.881)
		SDR	5.642	0.0039	**0.0104**	7.002	0.0035	**0.0284**	−0.873 (−1.862, 0.116)
L_PD	Config.	SRSR	6.468	0.0019	**0.0058**	1.402	0.2635	0.3329	−0.415 (−0.613, −0.217)
		SDR	6.567	0.0018	**0.0058**	3.036	0.0647	0.1294	+0.532 (0.199, 0.866)