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Headwater sediment dynamics in a debris flow catchment constrained by high-resolution topographic surveys

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Table S1: Sediment budgets for all catchment subsystems revealed by comparing the successive TLS surveys operated over 16 months of monitoring. Each survey period are expressed separately in volume unit [m^3] with uncertainty.

First monitoring period	Col du Baure						Roche Ravine								Manival				Grosse Pierre				Genièvre[1]	
	Gully Series				Baure Ravine		Lower				Upper				Hillside		Channel		Hillside		Channel		Hillside	
	Hillside		Channel		Hillside		Hillside		Channel		Hillside		Channel											
Rockfall	1.9	±0.1			25.5	±2.2	3.4	±0.5			37.4	±0.6			24.9	±1.5			2.5	±0.5			3.8	±0.5
Deposition	0.0	±0.0	79.7	±3.7	72.2	±2.4	10.0	±1.2	69.4	±7.2	0.0	±0.0	0.0	±0.0	11.1	±1.1	0.0	±0.0	309.2	±30.1	0.00	±0.00	5.8	±0.7
Erosion	19.2	±0.7	60.2	±2.0	159.5	±12.4	14.2	±1.0	102.9	±6.8	14.5	±1.1	107.1	±11.7	22.3	±1.6	366.2	±22.8	302.3	±31.5	0.00	±0.00	15.1	±1.3
Subtotal	-2.1	±0.7	-10.0	±4.2	-103.4	±12.8	-7.7	±1.6	-51.0	±9.9	-51.9	±1.3	-107.1	±11.7	-36.1	±2.5	-366.2	±22.8	-13.1	±43.6	0.00	±0.00	-13.1	±1.5

Second monitoring period	Col du Baure						Roche Ravine								Manival				Grosse Pierre				Genièvre[1]	
	Gully Series				Baure Ravine		Lower				Upper				Hillside		Channel		Hillside		Channel		Hillside	
	Hillside		Channel		Hillside		Hillside		Channel		Hillside		Channel											
Rockfall	1.2	±0.1			5.2	±0.9	1.4	±0.2			18.0	±0.7			23.5	±0.9							1.2	±0.2
Deposition	42.3	±1.5	15.1	±0.9	50.6	±3.1	4.1	±1.1	1.1	±0.4	0.2	±0.1	11.0	±0.5	5.2	±0.6	100.0	±6.4	79.4	±5.8	0.0	±0.0	0.0	±0.0
Erosion	76.9	±27	39.4	±1.0	112.5	±6.8	95.0	±4.7	0.6	±0.3	9.0	±0.5	39.6	±2.2	270.0	±7.4	442.9	±15.8	76.1	±5.0	0.0	±0.0	0.3	±0.1
Subtotal	-44.8	±3.1	-15.6	±1.4	-60.9	±7.5	-92.3	±4.9	0.4	±0.5	-26.8	±0.8	-28.6	±2.3	-278.3	±61.1	-322.8	±17.1	3.4	±2.1	0.0	±0.0	-1.5	±0.2

Third monitoring period	Col du Baure						Roche Ravine								Manival				Grosse Pierre				Genièvre[1]	
	Gully Series				Baure Ravine		Lower				Upper				Hillside		Channel		Hillside		Channel		Hillside	
	Hillside		Channel		Hillside		Hillside		Channel		Hillside		Channel											
Rockfall	17.7	±0.3		±0.0	825.5	±25.1	28.6	±1.2			256.6	±17.2			2034.8	±39.7			145.3	±2.5			116.3	±3.0
Deposition	148.6	±1.5	3.3	±0.3	1671.1	±71.6	212.0	±30.0	0.0	±0.0	67.6	±4.75	147.9	±18.2	515.9	±9.4	948.1	±17.4	343.8	±16.9	6.2	±0.5	204.5	±13.6
Erosion	58.5	±2.3	97.1	±3.5	453.3	±33.2	274.8	±5.8	21.6	±1.7	379.6	±16.3	44.0	±3.4	196.1	±4.8	486.5	±19.8	129.2	±4.7	1.7	±0.2	450.1	±13.7
Subtotal	72.4	±2.8	-93.8	±3.5	392.3	±79.3	-91.5	±30.6	-21.6	±1.7	-558.7	±9.57	104.0	±18.5	-1715.0	±11.9	461.6	±26.4	69.3	±11.0	4.5	±0.5	-361.8	±19.6

[1] The downstream reaches of the Genièvre first-order channel was not monitored, as they displayed barely any in-channel debris storage.