frontiers

Supplementary Material

Morphometric fingerprints and downslope evolution in bathymetric surveys: insights into morphodynamics of the Congo Canyon-Channel

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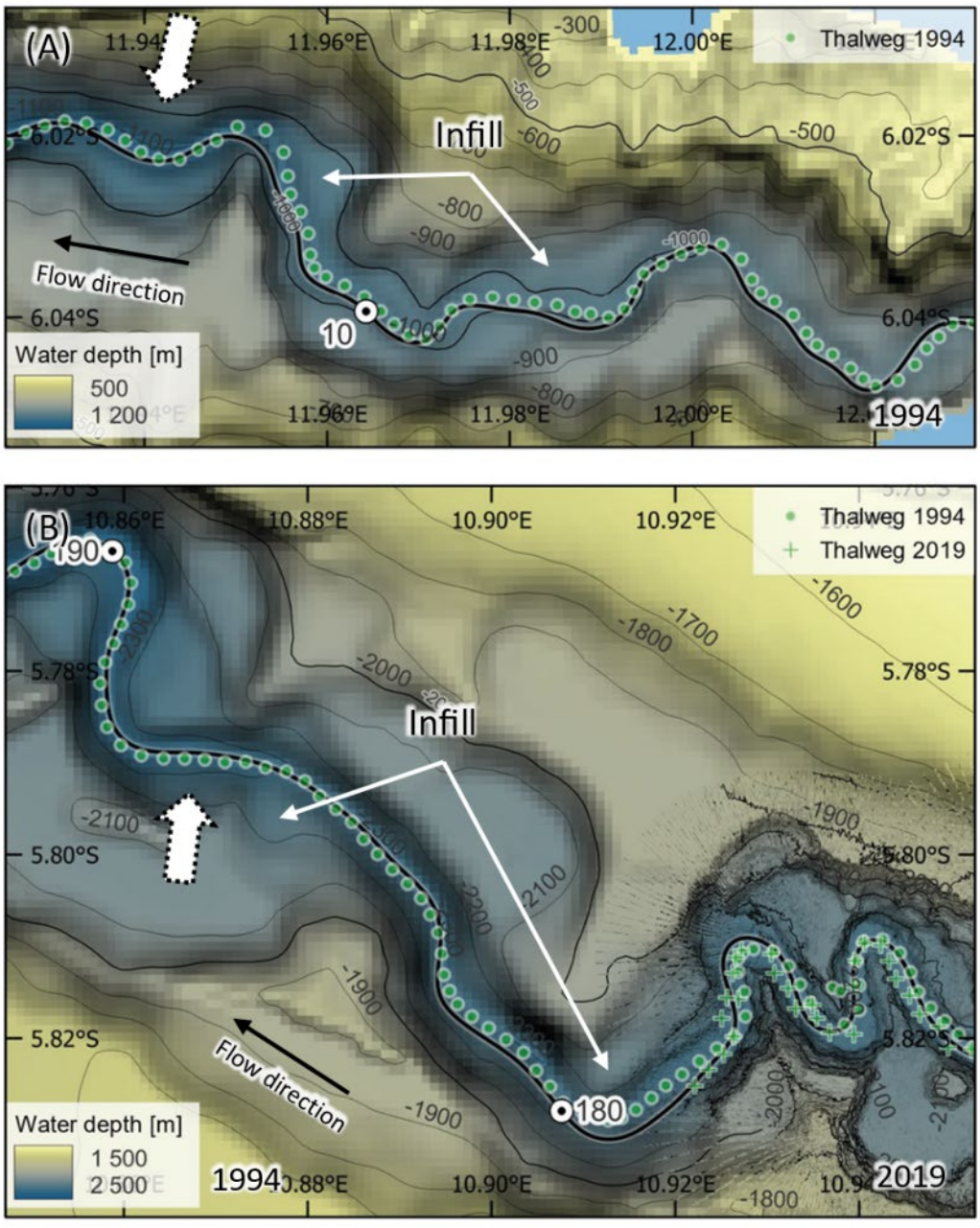
1 Possible older landslides



Supplementary Figure S1. Possible older landslides (dotted arrows in Figure 5), (A) possible older damming landslides at 10 km as indicated by the morphometric fingerprint in Figure 5B,C. (B) possible older damming landslides at 190 km as indicated by the morphometric fingerprint in Figure 5B,C.

2 Parameters of the linear regression shown in Figure 9

Supplementary Table S1: Parameters of the linear regression shown in Figure 9 (difference of levee crest elevations ($(z_R - z_L)/H_B$), levee/wall slopes (α_L, α_R) and offset between thalweg and centerline (n_T/B) against width-to-curvature ratio (B/R) at apices and 1 km downstream of apices for different reaches). In the form of $y = \beta_0 + \beta_1 x$ where β_0 is the y-intercept, β_1 is the slope (or regression coefficient). The goodness of fit is given by R^2, the coefficient of determination.

		Lower reach (900-1117.5 km)						Middle reach (290-900 km)						Upper reach (0-290 km)					
		1 km downstream			at apices			1 km downstream			at apices			1 km downstream			at apices		
Width-to-curvature ratio (B/R) against…	Data	β_0	β_1	R^2	β_0	β_1	R^2	β_0	β_1	R^2	β_0	β_1	R^2	β_0	β_1	R^2	β_0	β_1	R^2
Difference of levee crest elevations ($(z_R - z_L)/H_B$) (Figure 9A-F)	1994/98	0.10	0.03	0.00	0.06	0.15	0.10	-0.01	0.08	0.07	0.01	**0.19**	**0.40**	-0.27	0.12	0.07	-0.30	**0.33**	**0.39**
	2019	0.06	-0.01	0.00	0.03	0.10	0.04	0.02	0.10	0.49	0.01	**0.11**	**0.53**	-0.07	0.03	0.01	0.02	**0.27**	**0.43**
Left levee/wall slope (α_L) (Figure 9G-L)	1994/98	7.49	-0.34	0.02	7.45	-0.99	0.12	14.65	**-1.28**	**0.24**	14.88	-2.06	0.44	15.99	-0.53	0.02	16.71	**-3.49**	**0.58**
	2019	17.00	-2.94	0.10	15.59	-2.40	0.08	20.45	**-3.94**	**0.68**	20.86	-2.17	0.32	23.57	-0.41	0.01	22.82	**-3.19**	**0.47**
Right levee/wall slope (α_R) (Figure 9G-L)	1994/98	6.87	1.00	0.15	6.86	1.26	0.30	14.22	**1.16**	**0.20**	14.52	1.86	0.42	13.99	0.38	0.01	14.51	**2.62**	**0.37**
	2019	12.03	4.30	0.34	10.81	2.74	0.29	19.46	**4.18**	**0.67**	18.58	2.10	0.33	22.39	0.29	0.01	22.61	**2.16**	**0.22**
offset between thalweg and centerline (n_T/B) (Figure 9M-R)	1994/98	0.06	**-0.05**	**0.35**	0.04	-0.02	0.05	-0.01	-0.01	0.04	0.01	0.01	0.05	-0.04	0.02	0.07	-0.05	0.02	0.05
	2019	0.06	**-0.13**	**0.47**	0.06	-0.04	0.06	0.03	**-0.07**	**0.56**	0.04	-0.01	0.02	0.01	-0.02	0.02	0.02	0.01	0.01