Supplementary Information

Table S1. Plot distance from creekbank edge (m), elevation (NAVD 88, m), and calculated relative elevation (Z*) (eq. 1) relative to the nearest NOAA tide gauge (Ft. Pulaski, GA 32.035N, 80.903W).

Plot Number	NAVD88 elevation (m)	Relative Elevation (Z*)	Distance between Tea Bag Plots and Tidal Creek Bank Edge (m)
1	0.759	0.739	20.36
2	0.817	0.791	15.9
3	0.817	0.791	14.73
4	0.92	0.882	13.27
5	0.957	0.915	12.17
6	1.036	0.986	12.45
7	1.098	1.041	13.98
8	1.127	1.067	12.62
9	0.796	0.772	16.34
10	0.612	0.608	9.83
11	0.623	0.618	7.37
12	0.875	0.842	1.36
13	0.997	0.951	4.1
14	1.051	0.999	4.17
15	1.086	1.030	6.33
16	1.042	0.991	6.09
17	0.796	0.772	16.21
19	0.545	0.549	6.61
20	0.638	0.631	3.19
21	0.62	0.615	0.64
22	0.666	0.656	1.64
23	0.689	0.677	0.74
24	0.657	0.648	0.49

Table S2. Goodness of fit values (r^2) for the average rate of decomposition of fresh roots (± SE) from levee and plain salt marsh sites

Salinity (psu)	Salt Marsh Site	Decomposition Rate (k d^{-1})	r^2	p-value
16	Plain	0.0021	0.95	0.0001
	Levee	0.0015	0.85	0.0001
27	Plain	0.0019	0.91	0.0001
	Levee	0.0016	0.85	0.0001

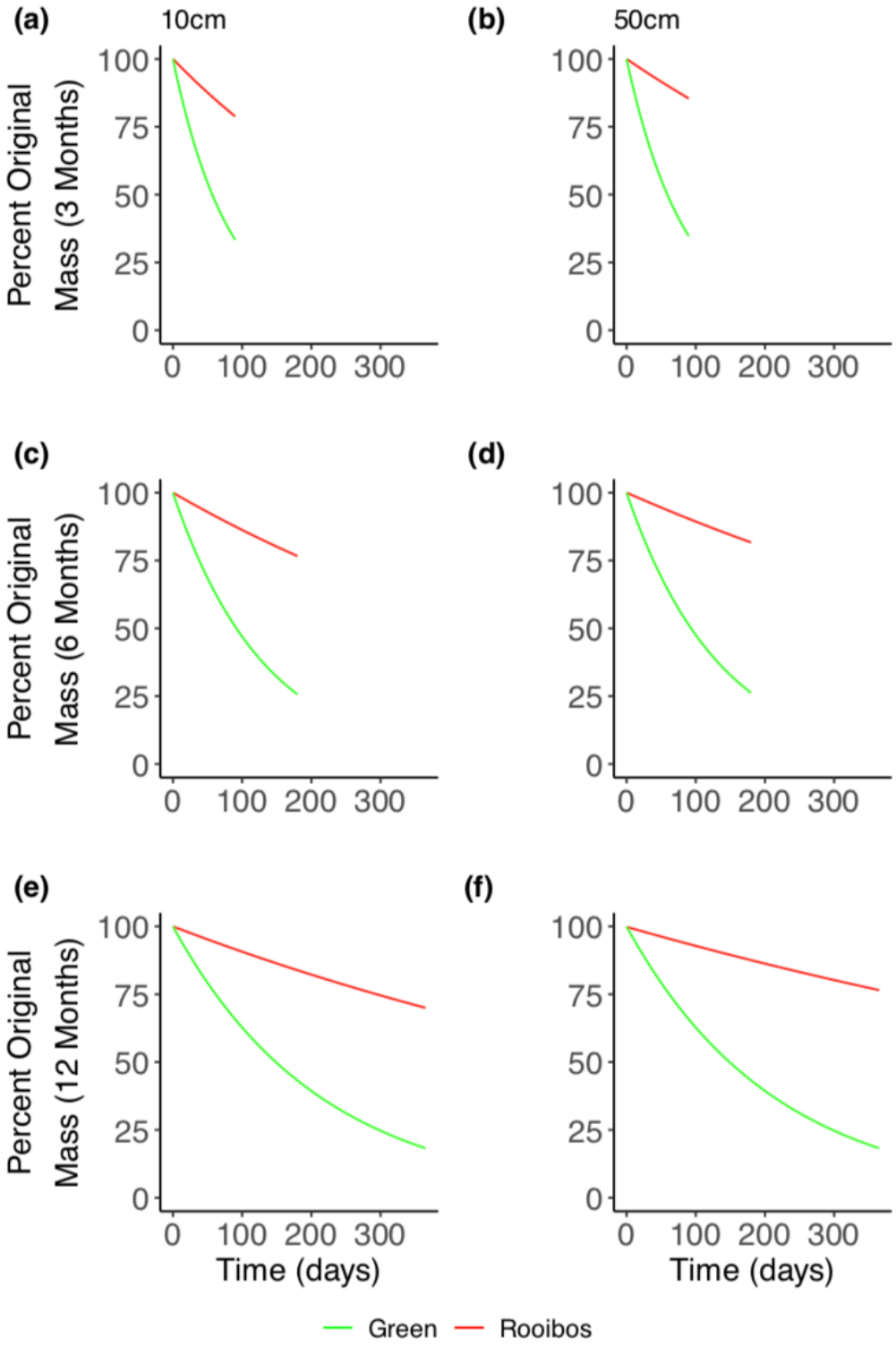

Figure S1. Average empirical decay rates of tea bags at 10 cm (left) and 50 cm (right) changed with tea bag type (rooibos, red; green, green) over time in days during 3- (top), 6- (middle), and 12- months (bottom).

Table S3) Values, and studies listed for Fig. 4. We report NA for studies without SE estimates.

Decay	Stabilization	Latitude	Time	Location	Labels	Study
12	0.34	31.5	3	Sapelo Island	GA, USA	
4.1	0.22	31.5	6	Sapelo Island	GA, USA	
2.6	0.26	31.5	12	Sapelo Island	GA, USA	
7	0.236	-37.7	3	Mar Chiquita	B, Argentina	Meuller et al 2018
13.5	-0.033	37.6	3	Wachapreague	VA, USA	Meuller et al 2018
14.5	0.0345	38.2	3	Rush Ranch	CA, USA	Meuller et al 2018
14	0.0585	38.2	3	Coon Island	CA, USA	Meuller et al 2018
24.5	0.1825	53.4	3	Noord-Friesland Buitendijks	FR, Netherlands	Meuller et al 2018
0	0.504	48.1	3	Rimouski	QC, Canada	Meuller et al 2018
6	0.4215	53.8	3	Spiekeroog	NI, Germany	Meuller et al 2018
11	-0.078	42.7	3	TIDE project	MA, USA	Meuller et al 2018
12	-0.035	42.7	3	Laws Point	MA, USA	Meuller et al 2018
16.5	-0.085	38.7	3	Patuxent River	MD, USA	Meuller et al 2018
8	0.219	40.8	3	Alfacs	TGN, Catalonia, Spain	Meuller et al 2018
8	-0.003	53.5	3	Schiermonnikoog	FR, Netherlands	Meuller et al 2018
5	0.258	45.5	3	Venice Lagoon (Meuller)	VEN, Italy	Meuller et al 2018
11	0.098	38.1	3	China Camp	CA, USA	Meuller et al 2018
15.5	-0.0675	53.4	3	Ameland	FR, Netherlands	Meuller et al 2018
19.5	0.0535	54.6	3	Sönke-Nissen-Koog	SH, Germany	Meuller et al 2018
27.5	0.1505	54	3	Dieksanderkoog	SH, Germany	Meuller et al 2018
-1	0.347	40.8	3	Garxal	TGN, Catalonia, Spain	Meuller et al 2018
11	0.1655	45.1	3	Dipper Harbor	NB, Canada	Meuller et al 2018
17	0.161	54.6	3	Mechelinskie Laki	PM, Poland	Meuller et al 2018
17.5	-0.1055	38.9	3	Rhode River	CA, USA	Meuller et al 2018
4	0.242	43.8	3	Long Marsh, north of inlet	ME, USA	Meuller et al 2018
7	0.189	43.8	3	Long Marsh, south of inlet	ME, USA	Meuller et al 2018
13	-0.028	31.5	3	Dongtan	ZJ, China	Meuller et al 2018
31	0.337	40.8	3	Vilacoto	TGN, Catalonia, Spain	Meuller et al 2018
7	0.195	43.8	3	Long Marsh, south of Narrows	ME, USA	Meuller et al 2018
8	0.4	54.6	12	Hamburger Hallig	SH, Germany	Tang et al 2023
12	0.015	45.3	3	Venice Lagoon (Puppin)	VEN, Italy	Puppin et al 2023
11	0.09	34.2	3	Wrightsville Beach	NC, USA	Yousefi Lalimi et al., 2018
8	0.18	56.0	3	Belhaven Bay	ELN, Scotland	Marley et al. 2019
3	0.15	56.0	12	Belhaven Bay	ELN, Scotland	Marley et al. 2019
11	0.18	25.7	3	Northeast Qatar	KH, Qatar	Alsafran et al. 2017
8.6	0.16	41.6	3	Cape Cod	MA,USA	Sanderman and Eagle, unpb