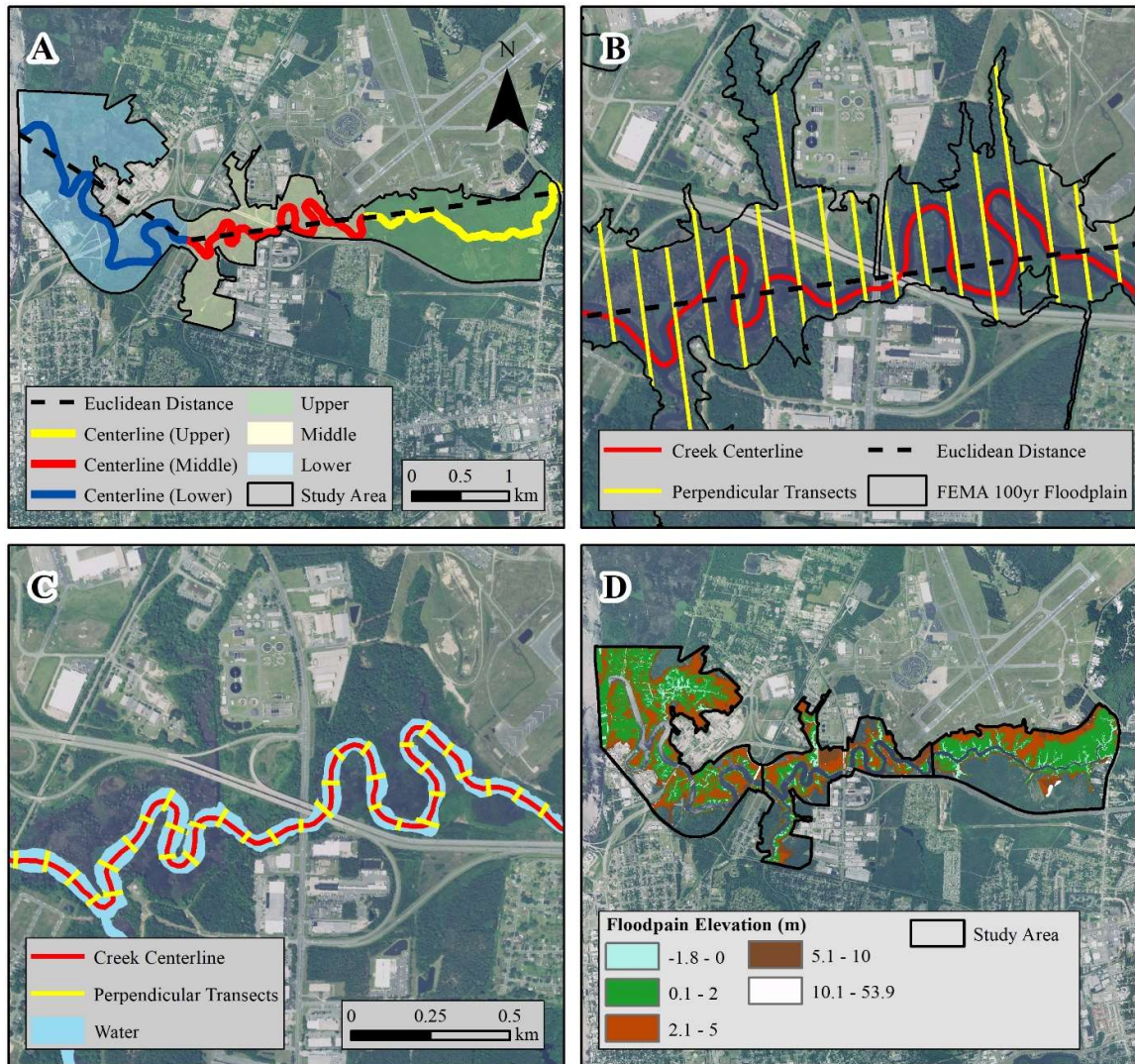**Supplementary Materials**

Figure S1. Physical geography metrics calculated for each study area: (**A**) sinuosity or curviness of creek channel, (**B**) floodplain width, (**C**) creek width and (**D**) floodplain elevation. Data Sources: FEMA, US Fish and Wildlife Service, US Geological Society.
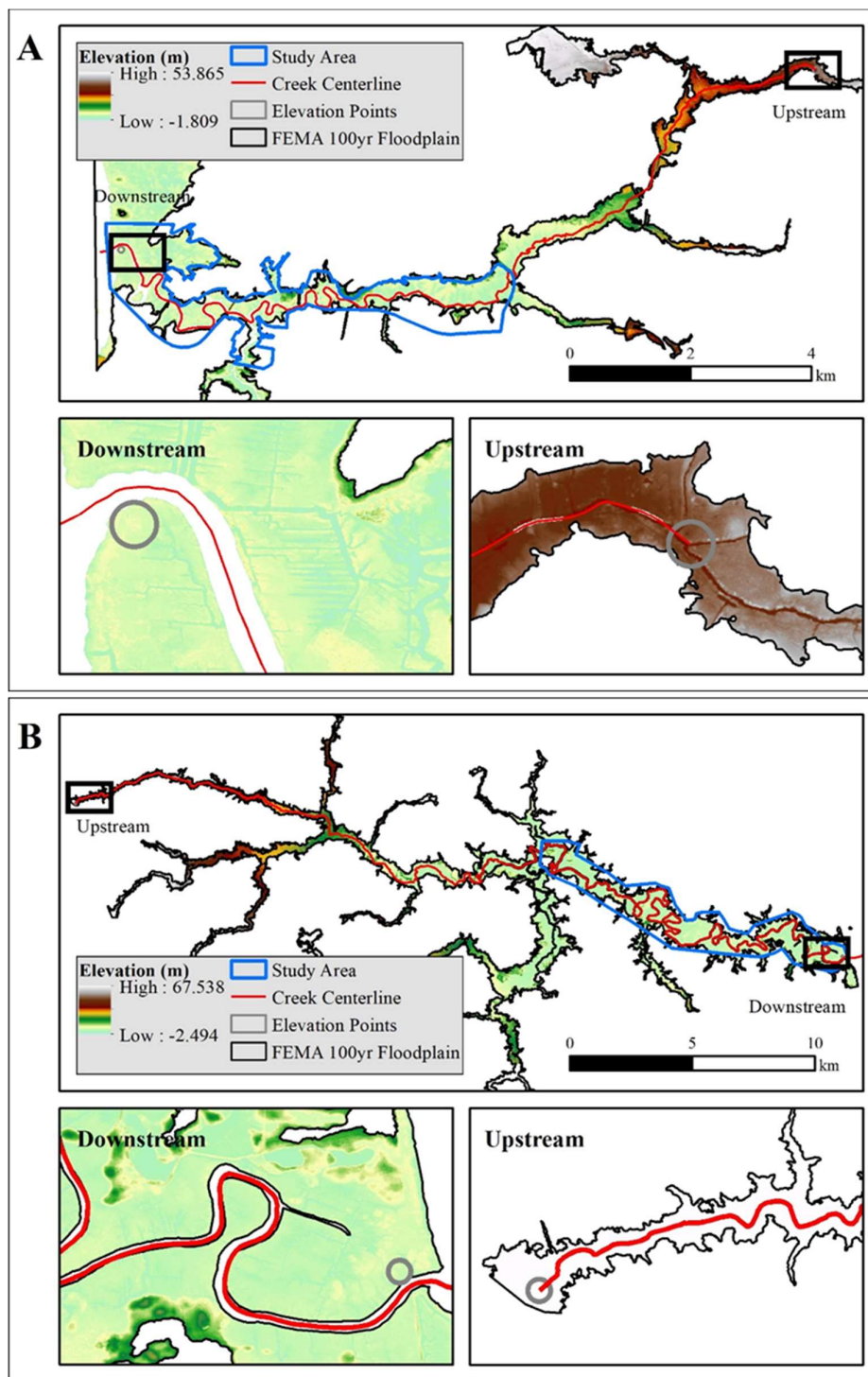
Figure S2. Location of upstream and downstream locations used to calculate creek slope for (**A**) Smith Creek and (**B**) Town Creek.
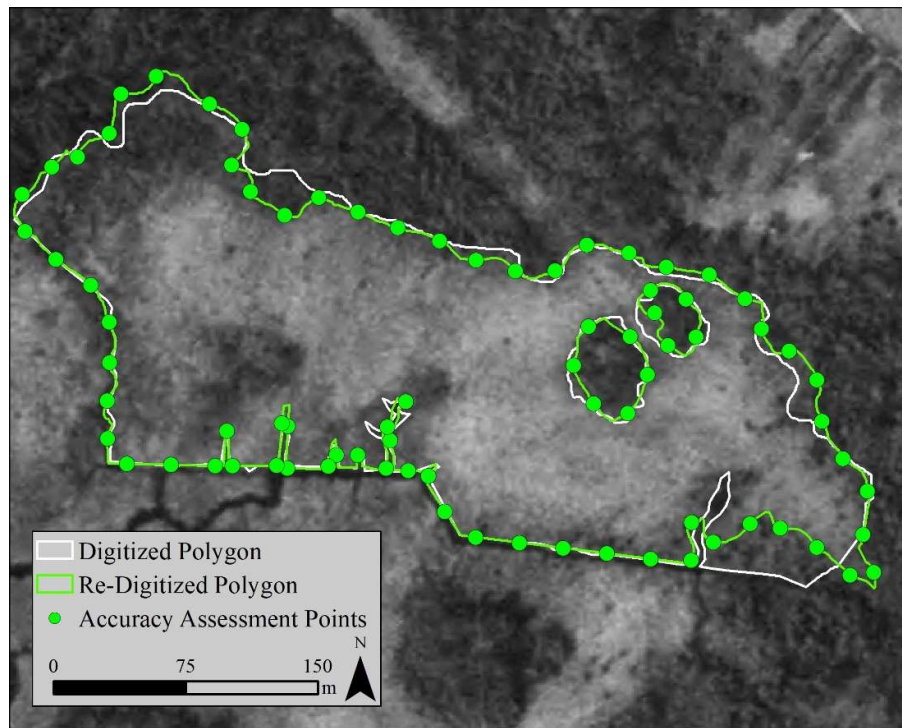
Figure S3. Example accuracy assessment where randomly selected polygons were re-digitized and the distance between the original and re-digitized lines was used to calculate digitizing accuracy.
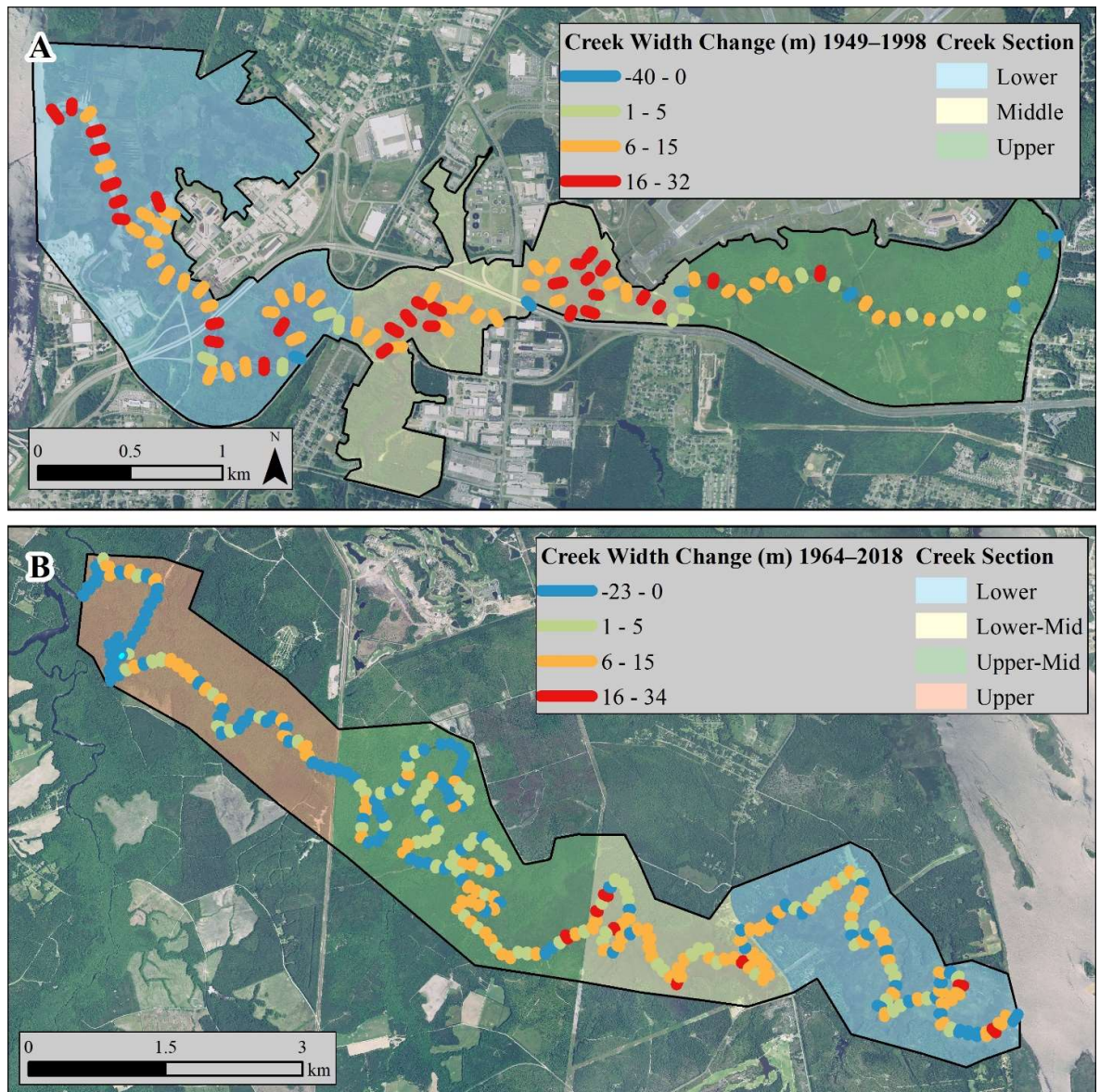
Figure S4. Change in creek width from (**A**) 1949–2018 for Smith Creek and (**B**) 1964–2018 for Town Creek.
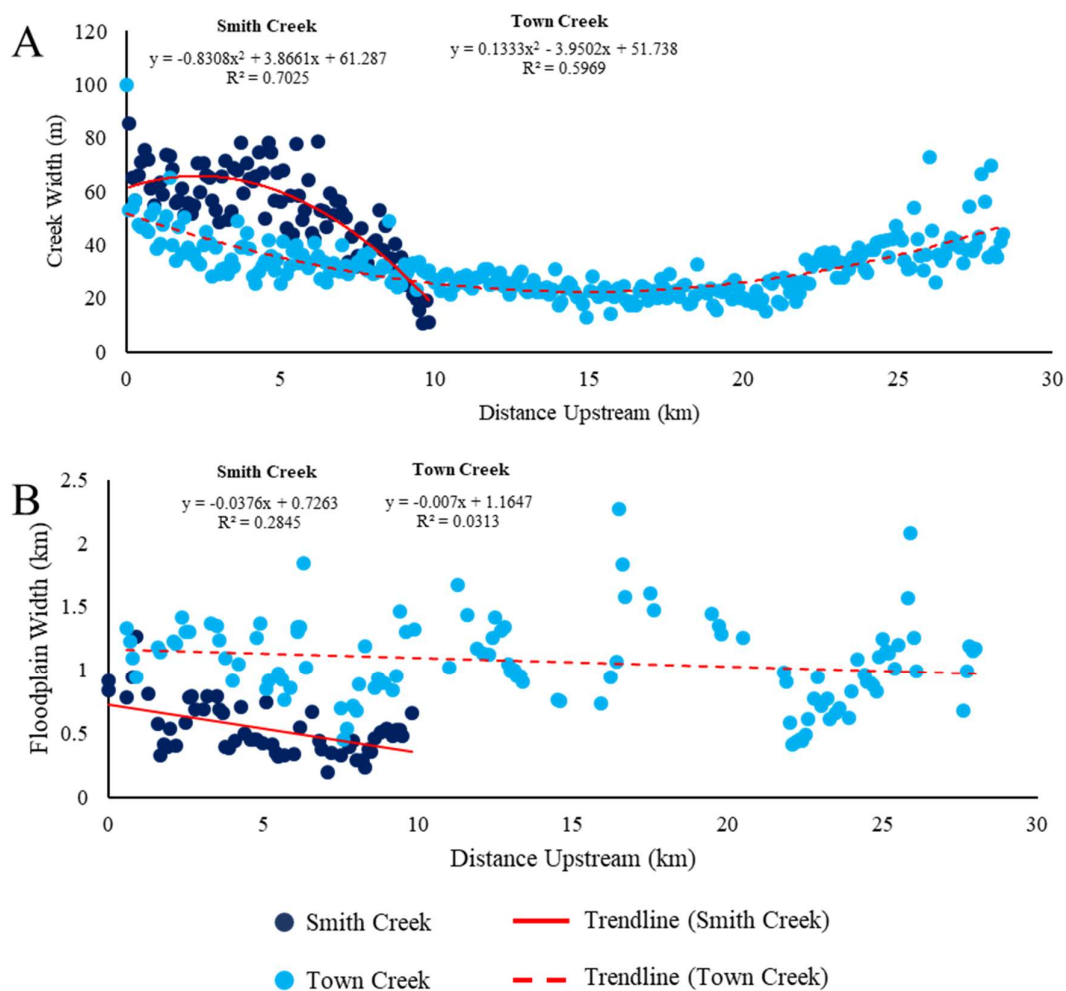
Figure S5. Geographic trend in creek metrics where (**A**) is creek width and (**B**) is the width of the floodplain. The X-axis is the distance upstream where 0 is located at the mouth of the creek and distance (in km) is further upstream.
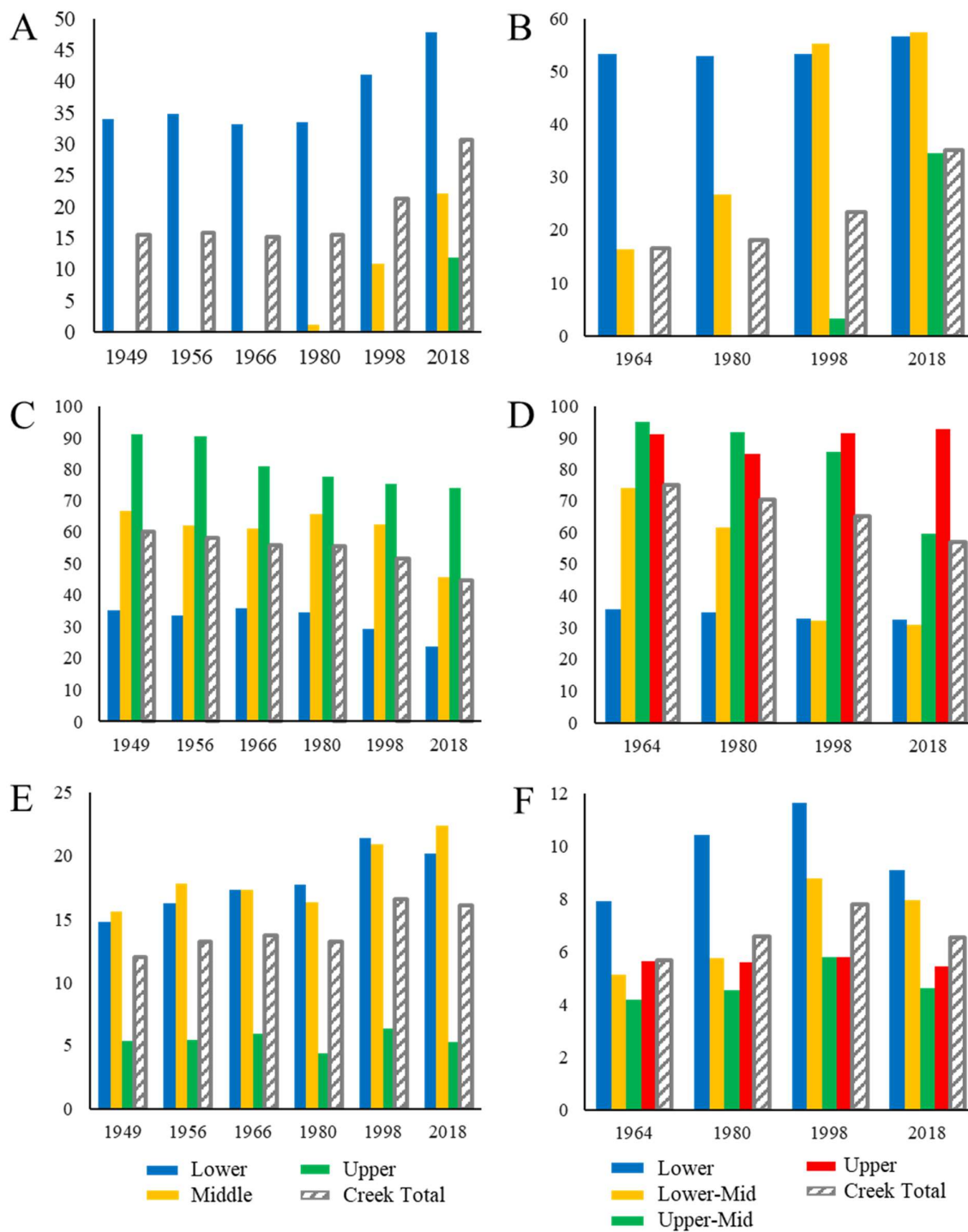
Figure S6. Percent land cover type through time by creek segment for Smith Creek (**A**, **C**, **E**) and Town Creek (**B**, **D**, **F**) where A and B are emergent wetland, C and D are forest, and E and F are water.

Table S1. Average difference in time (hrs:mins) between high tide at the NOAA tide gauge in Wilmington and instruments located in Smith Creek and Town Creek (August 10 to September 9, 2018).

Site	Average	Median	Max	Min	Range (max-min)	Standard Deviation
Smith Creek Lower	0:38	0:36	1:00	0:18	0:42	0:09
Smith Creek Middle	0:45	0:48	1:12	0:12	1:00	0:11
Smith Creek Upper	1:34	1:36	2:00	1:00	1:00	0:13
Town Creek: Middle	1:50	1:54	2:36	1:06	1:30	0:15

Table S2. Average creek width (m) through time for Smith Creek and Town Creek.

		1949	1956	1966	1980	1998	2010	2018
Smith Creek	**Whole Creek**	39.5	43.5	45.4	42.4	51.0	53.4	51.4
	Lower	50.6	55.2	56.8	55.6	61.7	63.2	63.8
	Middle	40.7	46.3	46.7	44.2	55.1	57.3	54.9
	Upper	23.2	24.3	28.1	22.7	30.7	31.8	28.2
		1964	**1980**	**1998**	**2010***	**2018**		
Town Creek	**Whole Creek**	27.1	29.1	30.4	31.6	29.4		
	Lower	35.2	38.5	38.7	39.7	38.9		
	Lower-Mid	22.5	25.5	27.3	29.8	29.2		
	Upper-Mid	19.6	21.4	23.1	22.9	21.1		
	Upper	34.6	34.6	34.6	34.6	34.6		

Table S3. Net change (%) between forest to emergent and emergent to water for each creek segment in Smith Creek.

Land Cover Change	Time Period	Lower		Middle		Upper	
		change (%)	rate (%/yr)	change (%)	rate (%/yr)	change (%)	rate (%/yr)
Forest to Emergent	1949–1956	2.26	0.32	0.00	0.00	0.00	0.00
	1956–1966	-0.57	0.23	0.00	0.00	0.00	0.00
	1966–1980	0.82	0.06	1.59	0.11	0.00	0.00
	1980–1998	11.22	0.62	11.28	0.63	0.00	0.00
	1998–2018	4.61	0.23	12.94	0.65	6.87	0.34
	Total	18.34		25.82		6.87	
Emergent to Water	1949–1956	0.77	0.11	0.00	0.00	0.00	0.00
	1956–1966	1.21	0.12	0.00	0.00	0.00	0.00
	1966–1980	0.27	0.02	-0.22	-0.02	0.00	0.00
	1980–1998	2.43	0.14	0.01	0.00	0.00	0.00
	1998–2018	-1.06	-0.05	0.34	0.02	-0.76	-0.04
	Total	3.63		0.13		-0.76	

Table S4. Net change (%) between forest to emergent and emergent to water for each creek segment in Town Creek.

Land Cover Change	Time Period	Lower		Lower-Mid		Upper-Mid		Upper	
		change (%)	rate (%/yr)	change (%)	rate (%/yr)	change (%)	rate (%/yr)	change (%)	rate (%/yr)
Forest to Emergent	1964–1980	1.66	0.10	11.21	0.70	0.00	0.00	0.00	0.00
	1980–1998	1.13	0.06	29.92	1.66	2.73	0.15	0.00	0.00
	1998–2018	0.83	0.04	1.95	0.10	32.10	1.61	1.10	0.05
	Total	3.63		43.07		34.83		1.10	
Emergent to Water	1949–1956	2.34	0.15	0.03	0.00	0.00	0.00	0.00	0.00
	1980–1998	0.60	0.03	2.16	0.12	-0.02	0.00	0.00	0.00
	1998–2018	-2.41	-0.12	-0.25	-0.01	-1.32	-0.07	0.00	0.00
	Total	0.52		1.94		-1.35		0.00	