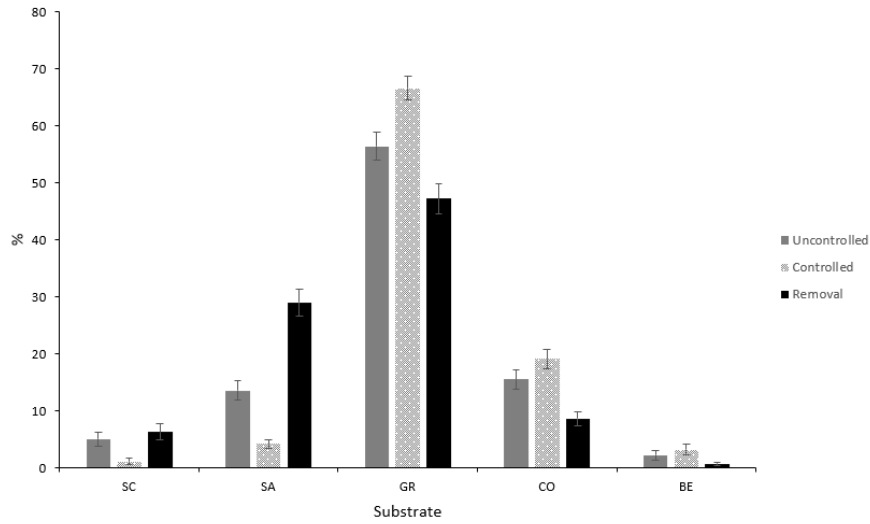


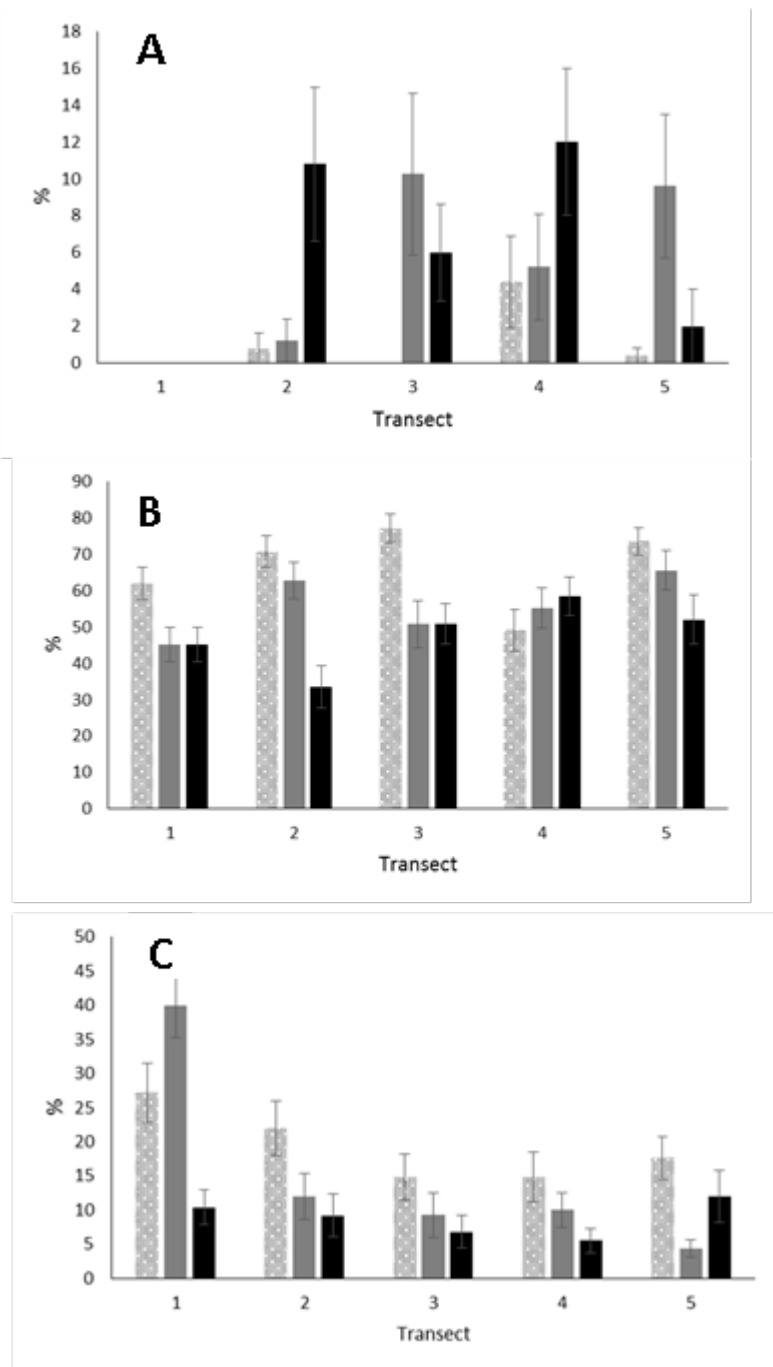
## Supplementary Materials

**Table S1.** Site history for fifteen sites in the Lake Michigan basin, Michigan, USA. Site codes are listed by anthropogenic barrier-river-upstream/downstream most location. Anthropogenic barriers are D (uncontrolled), H (controlled) R (removal). Rivers are G (Grand River), B (Battle Creek), M (Maple River), R (Rice Creek), C (Red Cedar River), F (Flat River), and K (Kalamazoo River). River locations are 1 (upstream most site) and 2 (downstream most site). NA = not applicable. DT= Distance between transects downstream of dam or dam removal. OP= Original Purpose. RP= Recent Purpose, R = Recreational, G = Grist Mill, F = Flood Control, H = Hydroelectric, C = Cooling Water. ? = unknown.

Site	Lat	Long	Year Built	Year Re-moved	River	Height (m)	Width (m)	Storage (acre-ft)	OP	RP	DT (m)
DG1	42.76343	-84.7624	1886	NA	Grand	2.44	90	1200	R	R	84
DG2	42.98152	-84.95010	1857	NA	Grand	5.54	84	1820	G	R	100
DB1	42.33154	-85.15309	1830s	NA	Battle Creek	3.96	89	200	G	R	132
DM1	43.09027	-84.40594	1840's	NA	Maple	3.05	70	80	F	F	161
DC1	42.72912	-84.48199	?	NA	Red Cedar	1.22	26	?	?	?	288
HG1	42.49996	-84.62995	1860	NA	Grand	5.19	73	300	G	H	104
HG2	42.88877	-84.93200	1894	NA	Grand	4.57	98	186	G	H	83
HB1	42.44621	-85.01625	1852	NA	Battle Creek	4.26	23	252	G	H	326
HF1	43.02069	-85.29210	1915	NA	Flat	7.01	46	1500	H	H	163
HK1	42.26248	-84.95374	1892	NA	Kalamazoo	3.66	40	1775	H	H	188
RG1	42.64653	-84.65108	1852	2006	Grand	3.05	62	NA	G	R	132
RB1	42.54458	-84.83612	1903	2006	Battle Creek	2.44	30	NA	C	R	271
RB2	42.31865	-85.17171	1909	2005	Battle Creek	1.07	30	NA	C	R	297
RR1	42.26754	-84.95370	1835	2008	Rice Creek	3.66	23	NA	G	R	360
RC1	42.68985	-84.28456	1840	1998	Red Cedar	3.20	42	NA	G	R	197



**Figure S1.** Mean percent substrate composition at three anthropogenic barriers in the Lake Michigan basin, Michigan, USA. Substrate types are silt/clay (SC), sand (SA), gravel (GR), cobble (CO), bedrock (BE). Kruskal-Wallis tests were performed within individual substrate groups. Error bars indicate standard error.



**Figure S2.** Mean percent substrate composition at anthropogenic barriers (n= 5 for each type of barrier) in the Lake Michigan basin, Michigan, USA. (A) silt/clay, (B) gravel, (C) cobble along transects. Error bars indicate standard errors.