

Figure S1. Temperature of the productivity experiment.

All temperature (°C) observations collected are plotted. Data were collected at 10-minute intervals using Sea-Bird Scientific SBE 56 temperature loggers.

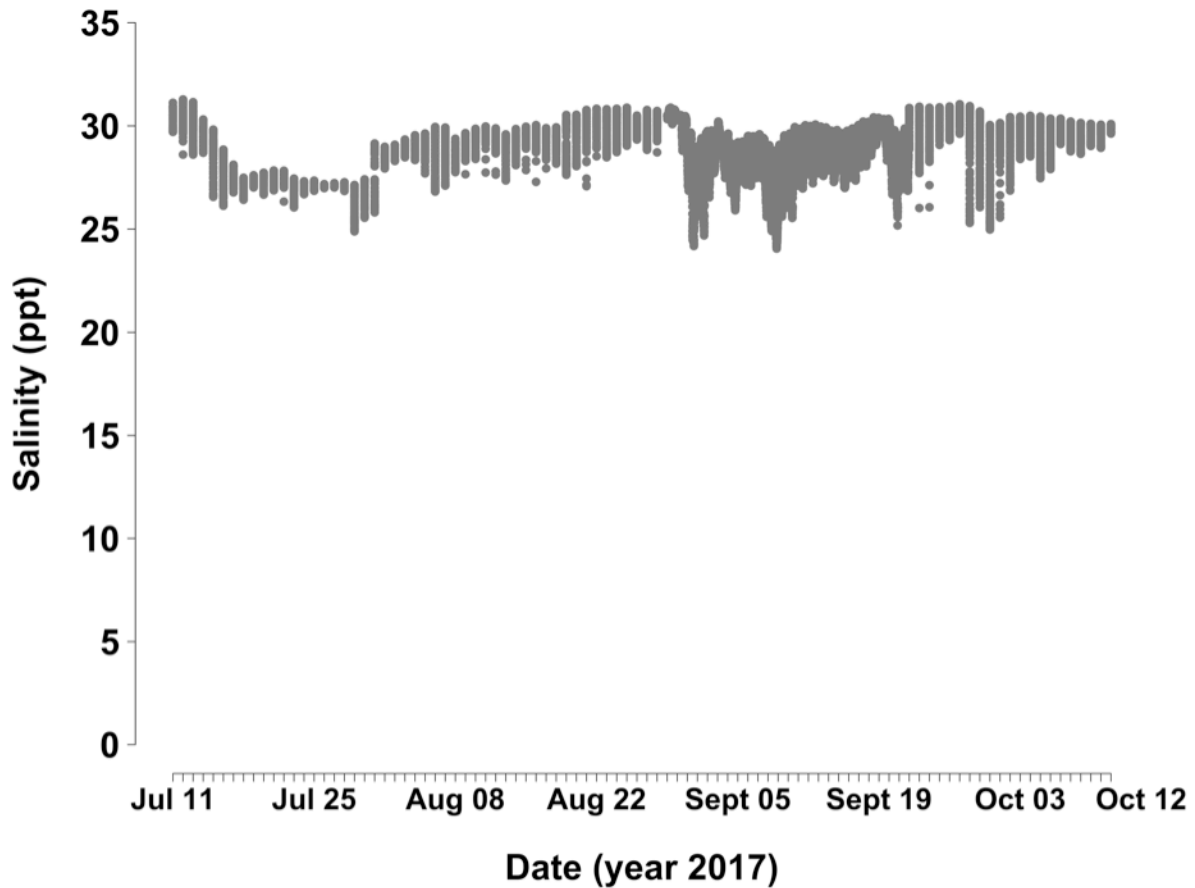


Figure S2. Salinity of the productivity experiment.

All salinity (ppt) observations collected are plotted. Most data were collected at 15-minute intervals using a YSI 6600 V2-4 multi-parameter water quality sonde. Data from a NOAA buoy (Station CMAN – 8536110) were used to fill a gap in the dataset from August 29 to September 21. These data were collected every six minutes. The buoy is located less than a mile from the NJ Aquaculture Innovation Center and data collected by the buoy is highly consistent with data collected from the laboratory’s flow-through seawater system.

Table S1. Morphometric data of bivalves used in the particle clearance experiments.

These values represent mean \pm standard deviation and were used to calculate tank-level clearance capacity of each mesocosm. Shell length represents the length of the anterior–posterior axis on the clams and the dorsal–ventral axis on the oysters. Shell height represents the dorsal–ventral axis on the clams and the anterior–posterior axis of the oysters. Shell width represents the dextral–sinistral axis of all bivalves. Whole wet weight is defined as the weight of the whole living organism with its shells and any external tissue patted dry. Dry tissue weight was determined after bivalve soft tissue was placed in a 68°C drying oven for 48 h, cooled, and weighed.

Growth parameter	<i>C. virginica</i> (Cv)	<i>S. solidissima</i> (Ss)	<i>M. mercenaria</i> (Mm)	<i>M. arenaria</i> (Ma)
Shell length (mm)	19.62 \pm 1.73	24.46 \pm 1.64	18.94 \pm 1.34	18.20 \pm 1.44
Shell height (mm)	16.95 \pm 1.68	18.07 \pm 1.06	16.93 \pm 1.51	11.84 \pm 0.91
Shell width (mm)	4.32 \pm 0.38	9.63 \pm 0.62	9.93 \pm 1.02	7.01 \pm 0.55
Whole wet weight (g)	0.822 \pm 0.139	2.161 \pm 0.390	2.152 \pm 0.595	0.926 \pm 0.210
Dry tissue weight (g)	0.009 \pm 0.003	0.073 \pm 0.018	0.042 \pm 0.014	0.029 \pm 0.006

Table S2. Initial morphometric data of bivalves used in the productivity experiment.

These values represent mean \pm standard deviation and were used to calculate the initial tank-level clearance capacity of each mesocosm. Shell length represents the length of the anterior–posterior axis on the clams and the dorsal–ventral axis on the oysters. Shell height represents the dorsal–ventral axis on the clams and the anterior–posterior axis of the oysters. Shell width represents the dextral–sinistral axis of all bivalves. Whole wet weight is defined as the weight of the whole living organism with its shells and any external tissue patted dry. Dry tissue weight was determined after bivalve soft tissue was placed in a 68°C drying oven for 48 h, cooled, and weighed.

Growth parameter	<i>C. virginica</i> (Cv)	<i>S. solidissima</i> (Ss)	<i>M. mercenaria</i> (Mm)	<i>M. arenaria</i> (Ma)
Shell length (mm)	27.69 \pm 2.53	22.40 \pm 0.71	17.47 \pm 2.21	17.18 \pm 2.01
Shell height (mm)	20.01 \pm 1.18	16.81 \pm 0.58	15.23 \pm 1.79	11.33 \pm 1.53
Shell width (mm)	6.71 \pm 0.55	8.21 \pm 0.28	8.92 \pm 1.36	6.23 \pm 0.63
Whole wet weight (g)	1.911 \pm 0.132	1.526 \pm 0.126	1.618 \pm 0.630	0.709 \pm 0.198
Dry tissue weight (g)	0.077 \pm 0.020	0.088 \pm 0.016	0.055 \pm 0.023	0.045 \pm 0.017