Figure S1. Map of Bouctouche station locations.
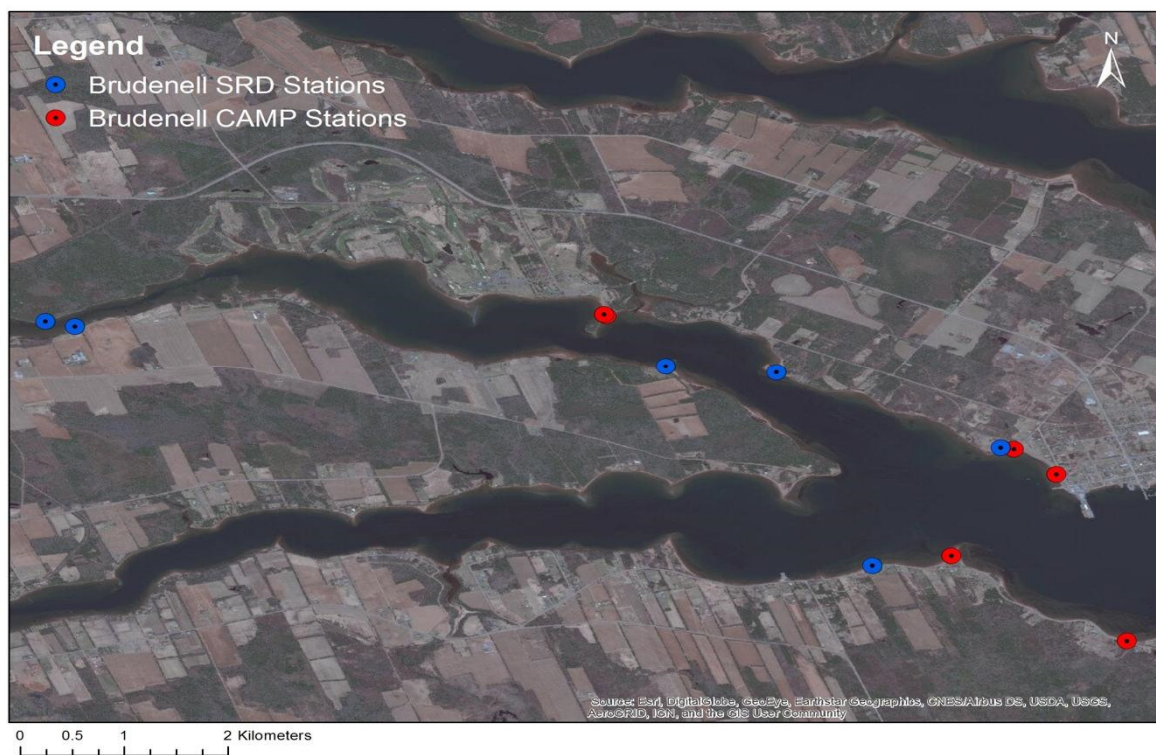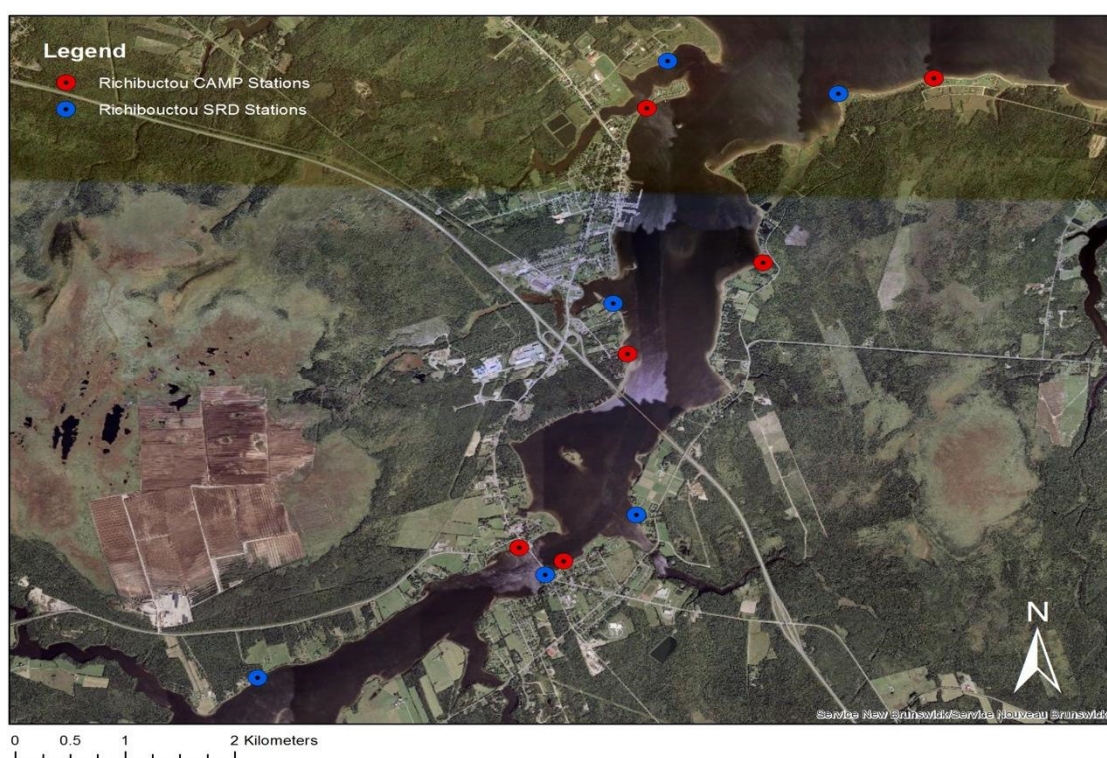

Figure S2. Map of Brudenell station locations.

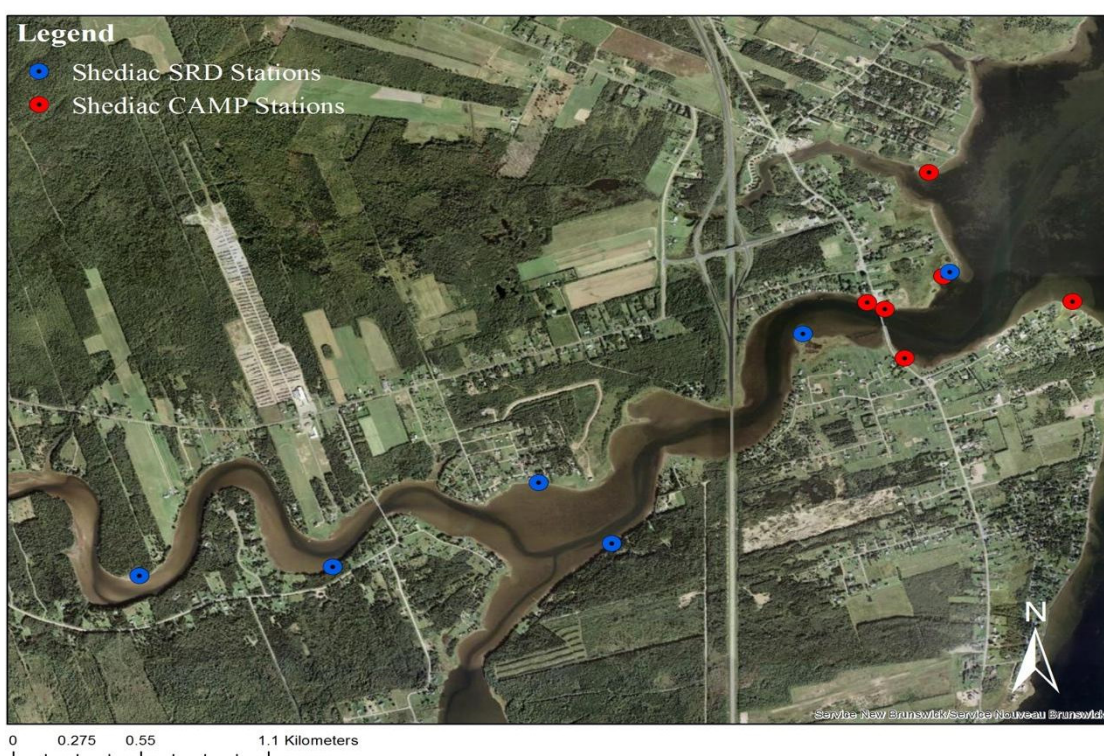**Figure S3.** Map of Cocagne station locations.

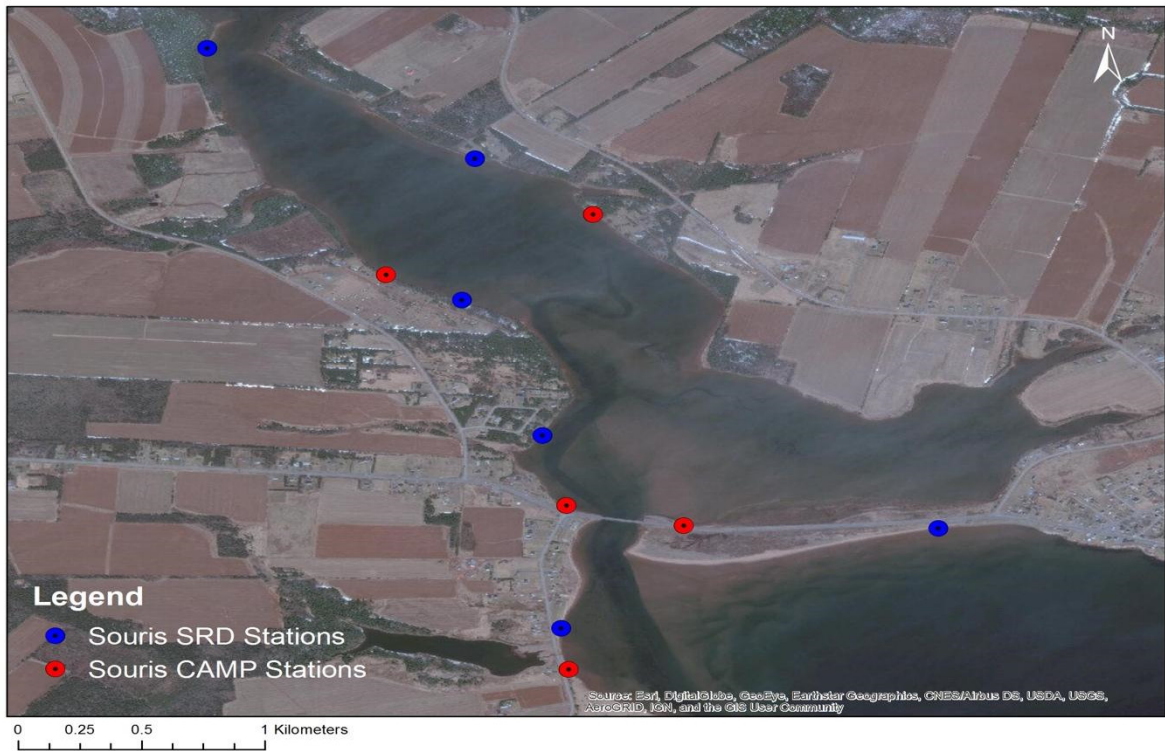**Figure S4.** Map of Richibucto station locations.

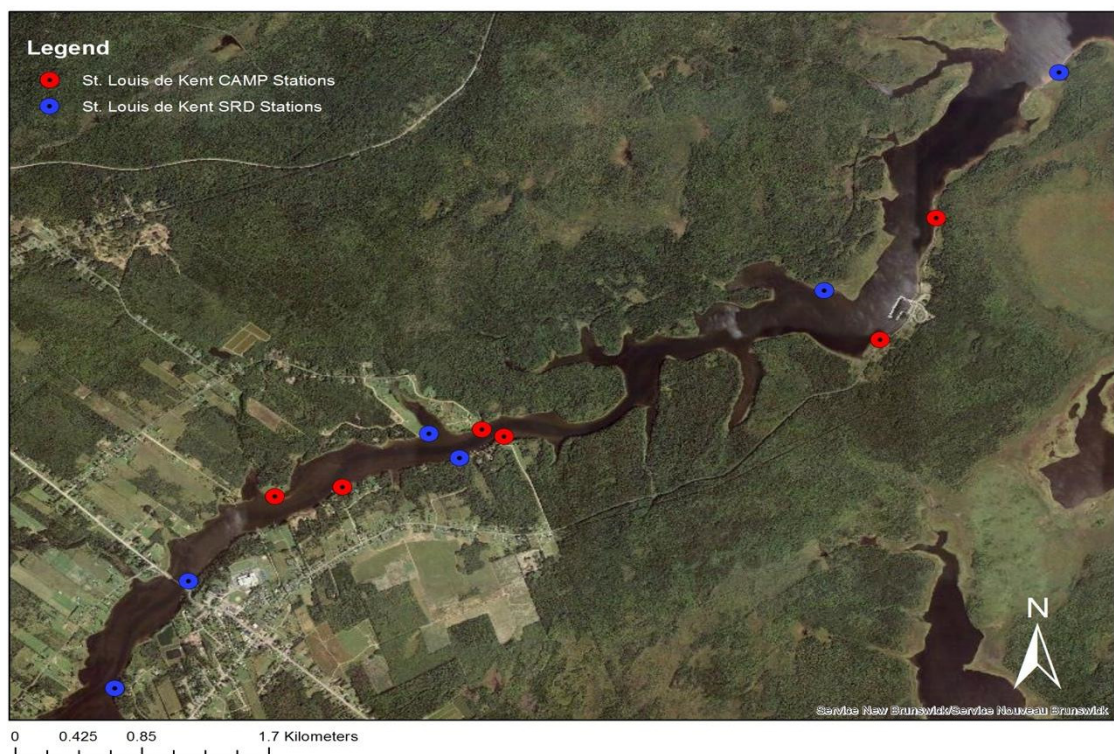**Figure S5.** Map of Scoudouc station locations.

Figure S6. Map of Shediac station locations.

Figure S7. Map of Souris station locations.

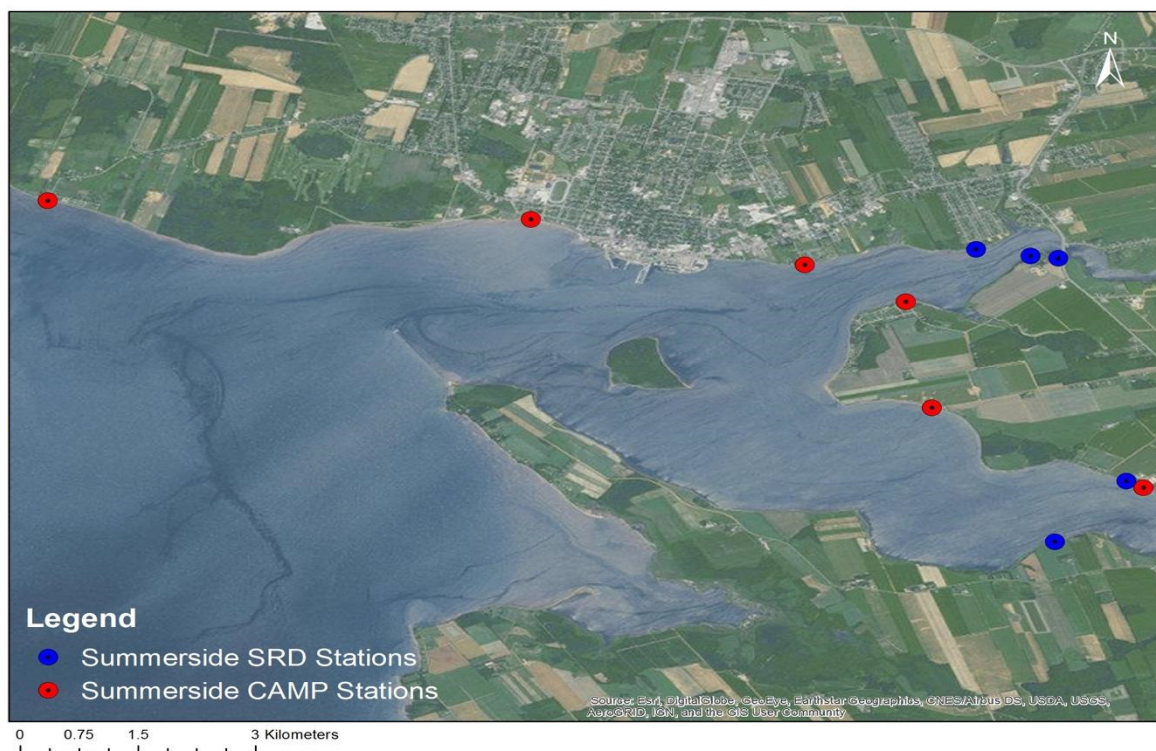**Figure S8.** Map of St. Louis de Kent station locations.

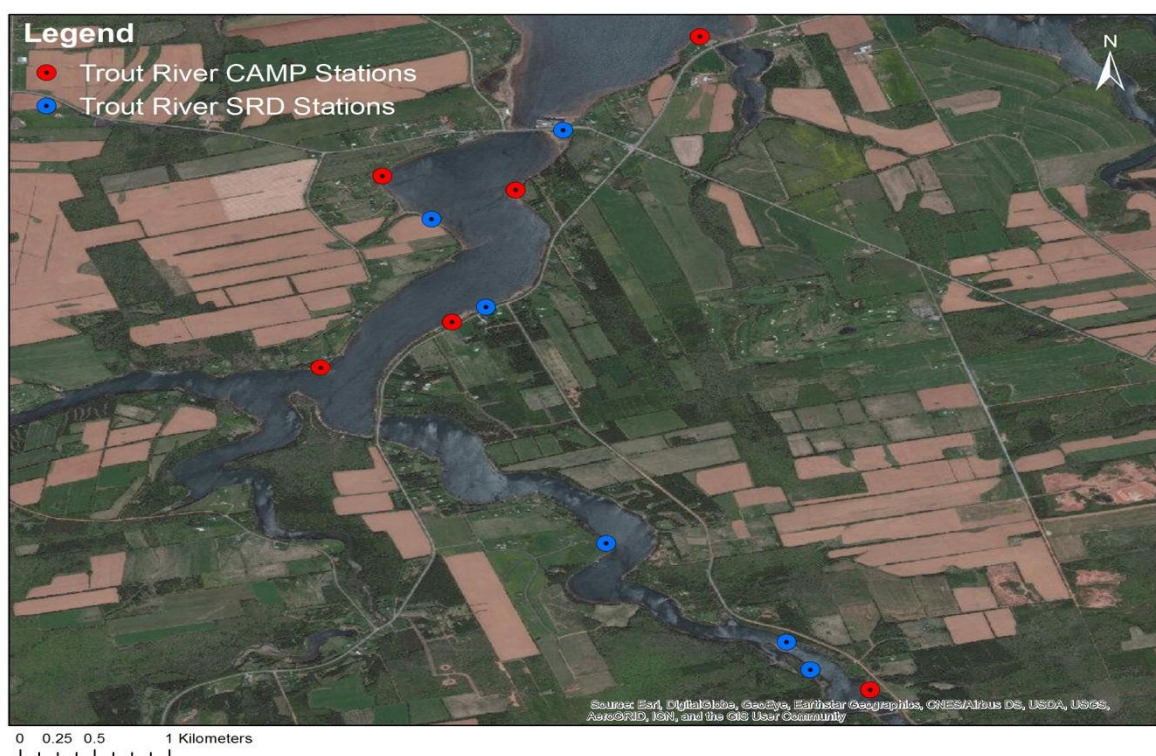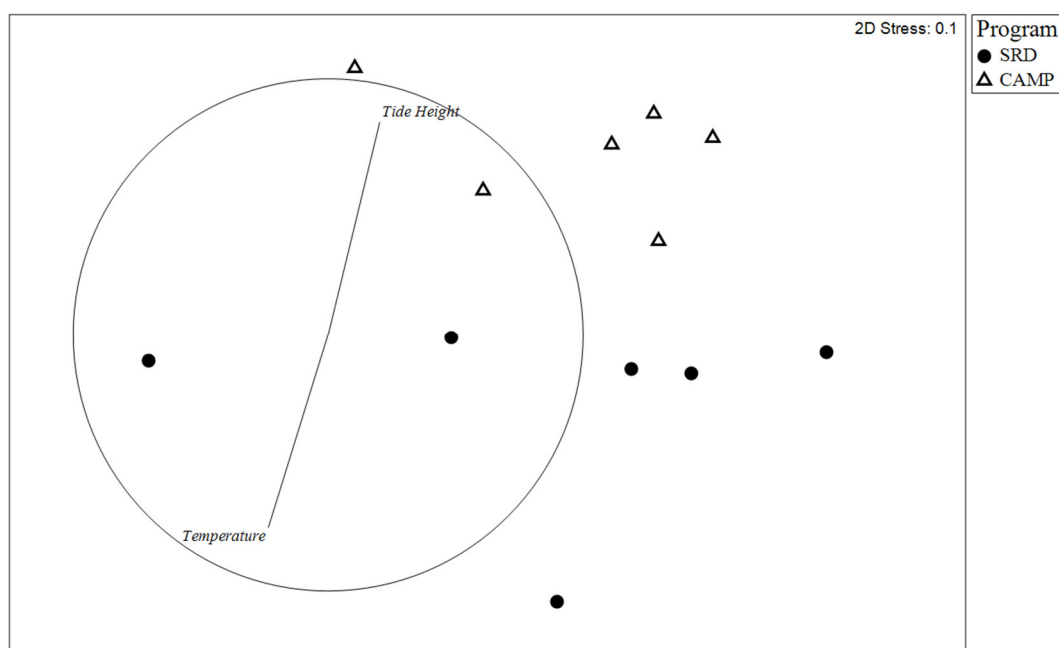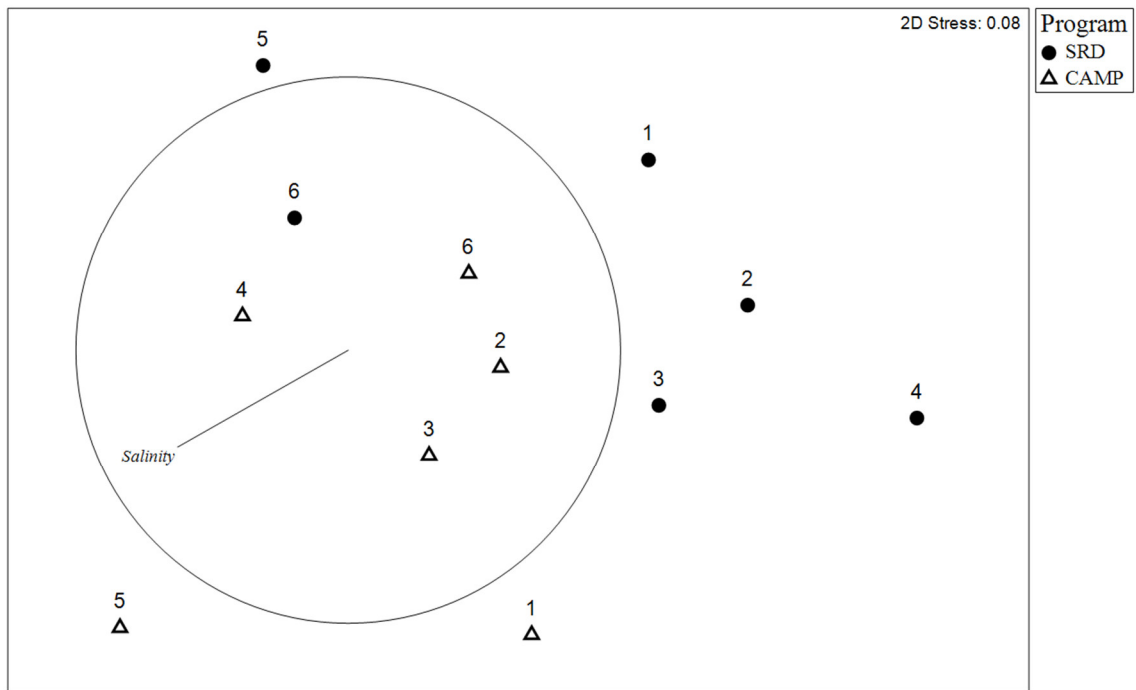**Figure S9.** Map of Summerside station locations.

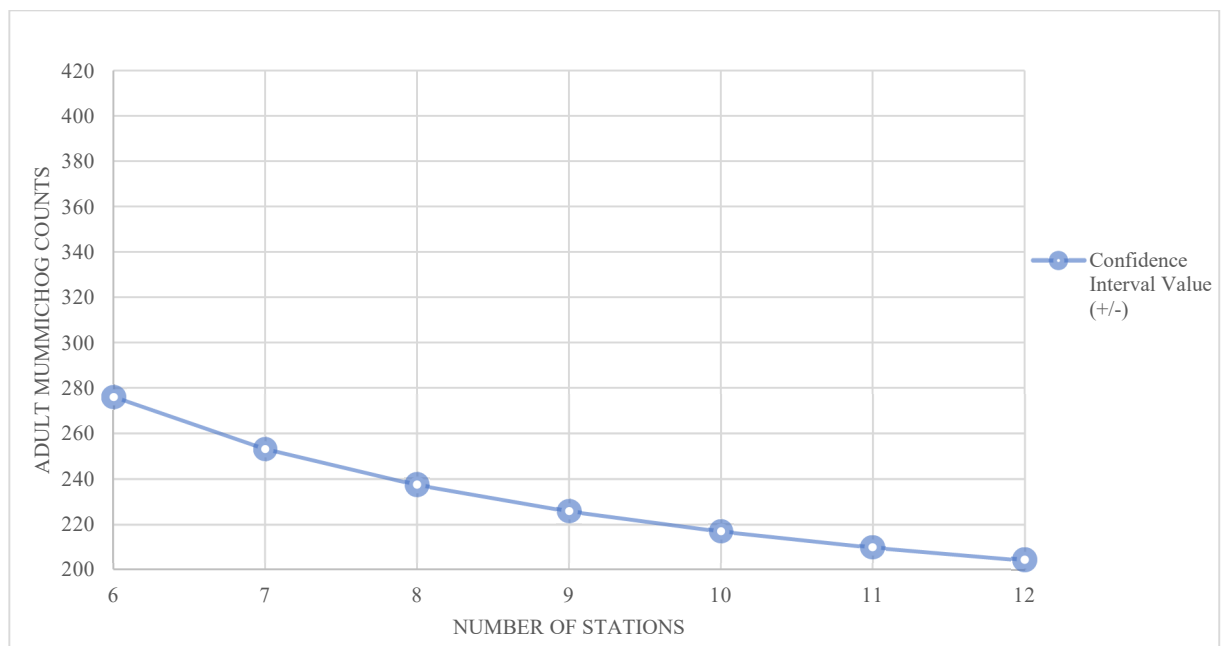**Figure S10.** Map of Trout River station locations.

Figure S11. Shade plot displaying the square-root transformed abundances of each nekton species (y-axis) per sampling design (Community Aquatic Monitoring Program [CAMP] and Stratified Random Design [SRD]) for the ten estuaries (x-axis). The intensity of the shade signifies the relative abundance of each species and the contribution of each species to the similarity calculation. An (A) indicates the adult life stage of the species and YOY indicates Young-of-the-Year life stage. The species names are: BSS (blackspotted stickleback), 3SS (threespine stickleback), GAST (gasterosteus), GASP (gaspereau), 4SS (fourspine stickleback), 9SS (ninespine stickleback), MUM (mummichog), FUND (fundulus), SSH (sand shrimp), GSH (grass shrimp), SILV (Atlantic silverside), SFL (smooth flounder), WFL (winter flounder), WNFL (windowpane flounder), FLOU (flounder), KIL (banded killifish), SBA (striped bass), EEL (American eel), PIP (northern pipefish), CUN (cunner), TOM (Atlantic tomcod), RCR (rock crab), GCR (green crab), MCR (mud crab), SMEL (rainbow smelt), PER (white perch), and GRUB (grubby).

Figure S12. Non-metric Multidimensional Scaling ordination plot of square-root transformed nekton data collected from Cocagne Community Aquatic Monitoring Program (CAMP) and Stratified Random Design (SRD) stations. Vector overlay displays lines indicating increased temperature/tide height along that axes.

Figure S13. Non-metric Multidimensional Scaling ordination plot of square-root transformed nekton data collected from Shediac Community Aquatic Monitoring Program (CAMP) and Stratified Random Design (SRD) stations. Vector overlay displays a line indicating increased salinity along that axes.

Figure S14. Confidence interval values (+/-) of estimates of adult mummichog abundances.

Figure S15. Confidence interval values (+/-) of estimates of adult fourspine stickleback abundances.

Figure S16. Confidence interval values (+/-) of estimates of adult sand shrimp abundances.

Figure S17. Confidence interval values (+/-) of estimates of Young-of-the-Year (YOY) Atlantic silverside abundances.

Table S1. Distance-based linear models (DISTLM) routine results for the analysis of the environmental variables that best describe the nekton assemblages in Cocagne.

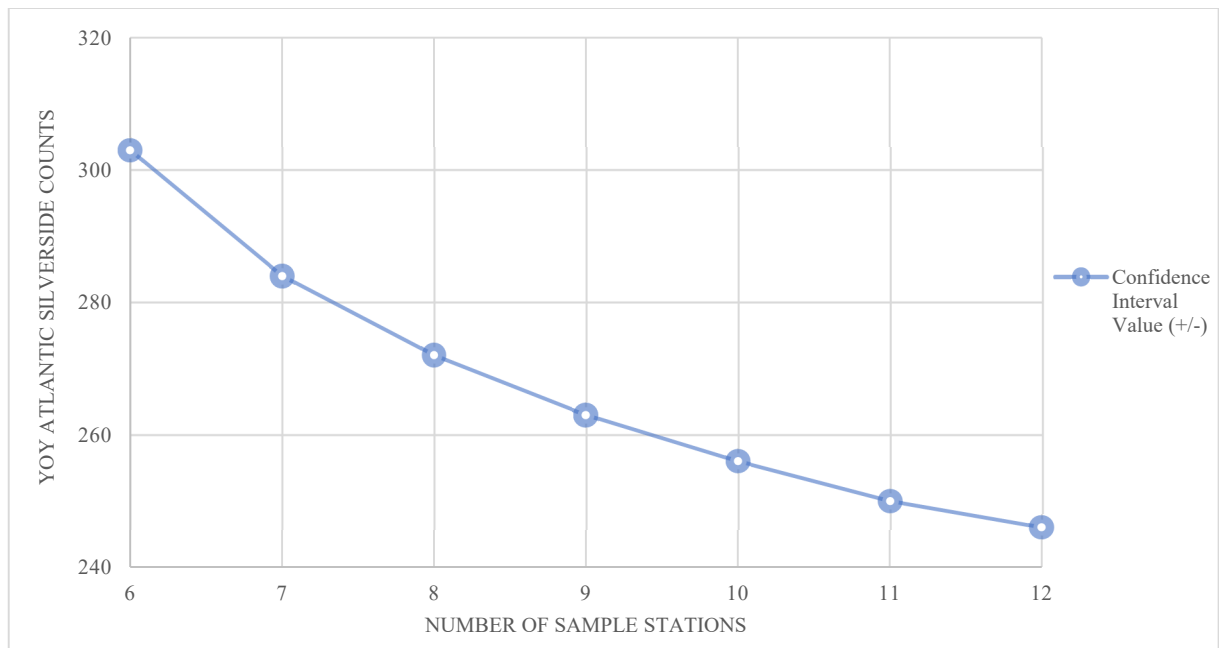| AICc	R^2	F	P	Model Variables
89.76	0.22	2.89	0.005	Tide Height
90.57	0.17	2.05	0.05	Temperature
91.25	0.12	1.38	0.22	Salinity
91.35	0.11	1.29	0.26	%Rock substrate
91.54	0.10	1.12	0.36	Dissolved Oxygen

Table S2. Distance-based linear models (DISTLM) routine results for the analysis of the environmental variables that best describe the nekton assemblages in Shediac.

AICc	R^2	F	P	Model Variables
83.23	0.19	2.27	0.04	Salinity
83.63	0.17	1.85	0.10	%Rock substrate
83.92	0.14	1.57	0.14	Temperature
84.35	0.10	1.16	0.33	%Gravel substrate
84.45	0.10	1.10	0.37	%Mud substrate

Table S3. Permutational-MANOVA (PERMANOVA) pair-wise test among factor Site for nekton data collected from the combined data set (Community Aquatic Monitoring Program (CAMP) plus Stratified Random Design (SRD) station data).

Sites	Combined	
	t	P
SCOU vs SHED	2.888	0.0001
SCOU vs SOUR	4.153	0.0001
SCOU vs COCA	2.154	0.0002
SCOU vs SUMM	3.165	0.0001
SCOU vs BRUD	3.278	0.0001
SCOU vs RICH	2.727	0.0001
SCOU vs BOUC	2.162	0.0003
SCOU vs STLO	3.586	0.0001
SCOU vs TROU	4.179	0.0001
SHED vs SOUR	5.441	0.0001
SHED vs COCA	3.351	0.0001
SHED vs SUMM	3.523	0.0001
SHED vs BRUD	3.813	0.0001
SHED vs RICH	4.146	0.0001
SHED vs BOUC	2.659	0.0002
SHED vs STLO	4.159	0.0001
SHED vs TROU	6.128	0.0001
SOUR vs COCA	3.555	0.0001
SOUR vs SUMM	5.275	0.0001
SOUR vs BRUD	3.071	0.0002
SOUR vs RICH	2.756	0.0001
SOUR vs BOUC	3.601	0.0001
SOUR vs STLO	4.316	0.0001
SOUR vs TROU	5.797	0.0001
COCA vs SUMM	3.386	0.0001
COCA vs BRUD	1.933	0.0016
COCA vs RICH	1.946	0.0025
COCA vs BOUC	2.739	0.0001
COCA vs STLO	2.523	0.0001
COCA vs TROU	3.049	0.0001
SUMM vs BRUD	3.525	0.0001
SUMM vs RICH	4.113	0.0001
SUMM vs BOUC	3.340	0.0001
SUMM vs STLO	3.457	0.0001
SUMM vs TROU	4.860	0.0001
BRUD vs RICH	2.733	0.0001
BRUD vs BOUC	3.170	0.0001
BRUD vs STLO	2.444	0.0002
BRUD vs TROU	4.194	0.0001
RICH vs BOUC	2.373	0.0002
RICH vs STLO	3.379	0.0001
RICH vs TROU	3.663	0.0001
BOUC vs STLO	3.741	0.0001
BOUC vs TROU	4.876	0.0001
STLO vs TROU	3.586	0.0001

Table S4. Separate one-way analysis of variance (ANOVA) using the factor Site for the number of each species captured.

Species	DF	Sum Sq	Mean Sq
Mummichog			
Site	8	4980725	622591
Residuals	45	14237469	316388
Adult Fourspine Stickleback			
Site	8	1334058	166757
Residuals	45	514836	11441
Adult Sand Shrimp			
Site	8	1158866	144858
Residuals	45	1484940	32999
YOY Atlantic Silverside			
Site	8	6016357	752045
Residuals	45	7053897	156753