Figure S1. River mouth locations assigned to the USGS sites in the RC4USCoast database. Green, red, and blue dots correspond to river discharging to the East, Gulf of Mexico, and West Coast, respectively.
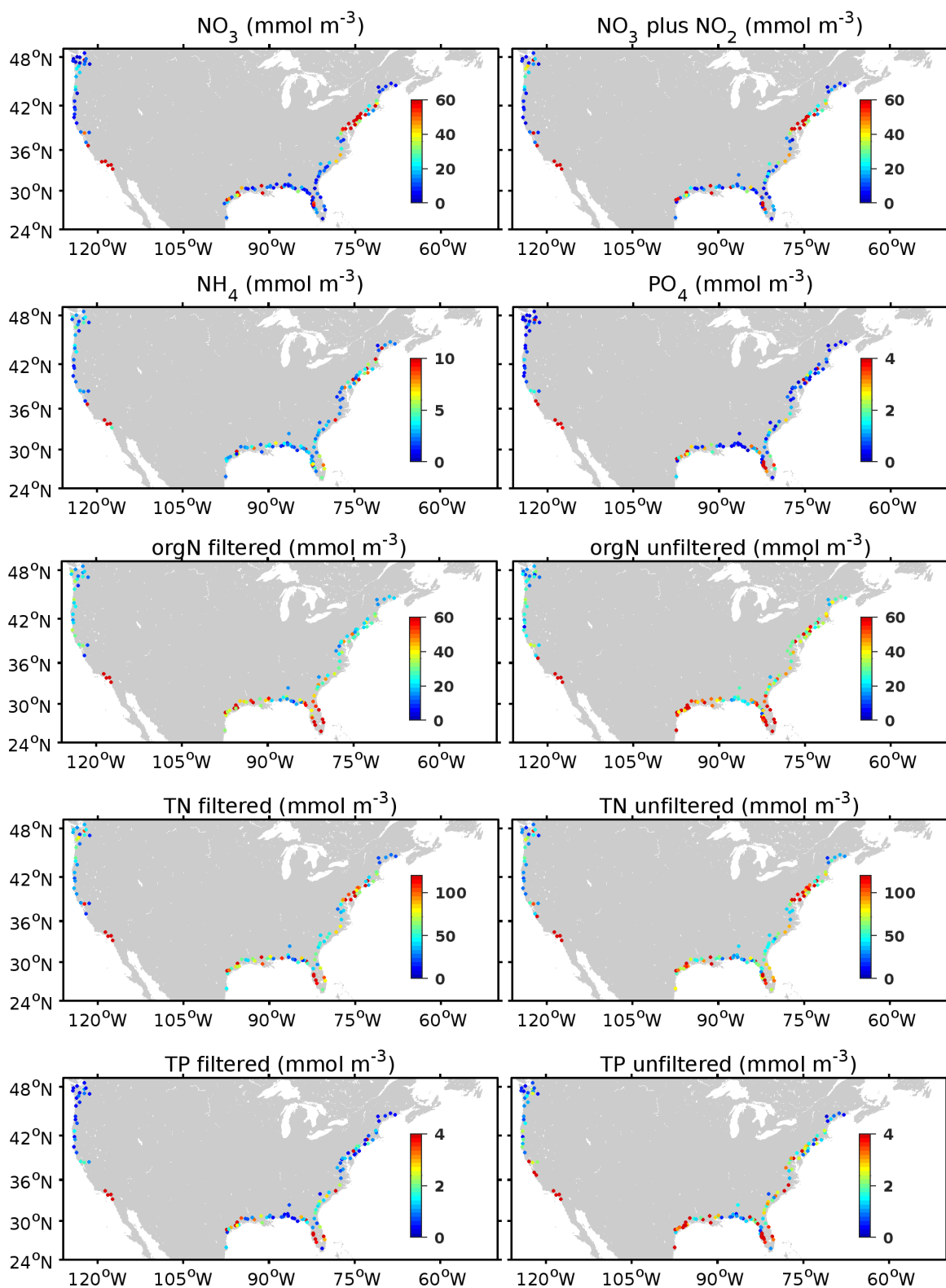
Figure S2. Mean patterns for nutrients concentration and other river's variables: nitrate (NO₃, filtered), nitrate plus nitrite (NO₃ plus NO₂, filtered), ammonia (NH₄, filtered), phosphate (PO₄, filtered), organic nitrogen (orgN, filtered and unfiltered), total nitrogen (TN, filtered and unfiltered), and total phosphorous (TP, filtered and unfiltered).
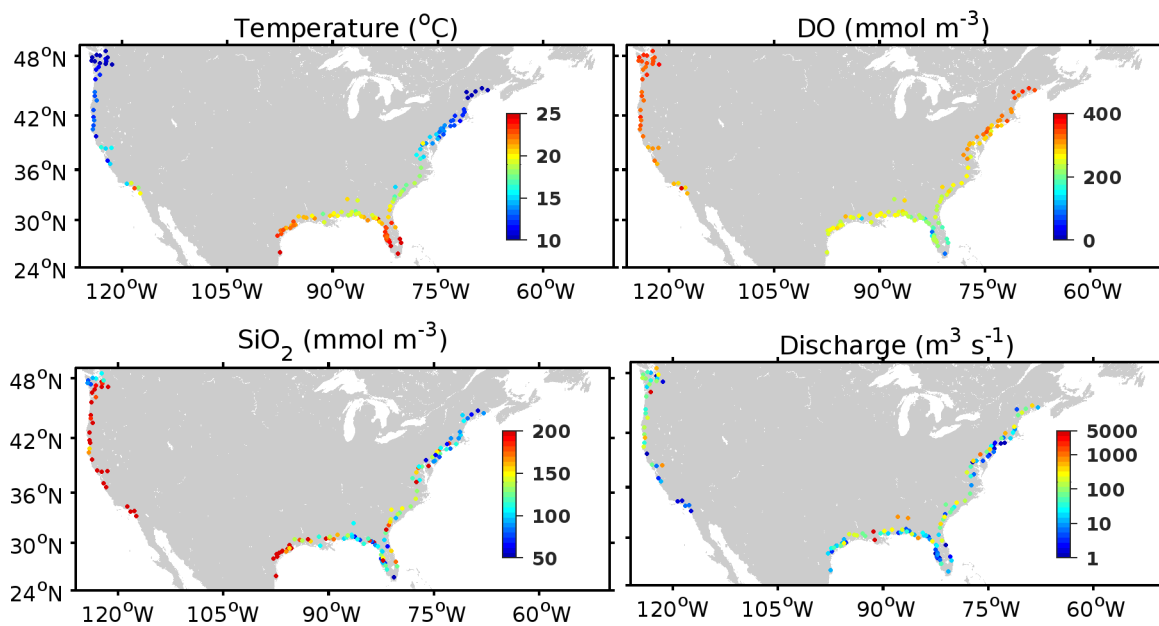
Figure S2 (continued). Water temperature, dissolved oxygen (DO), silica (SiO_2), and discharge. Colorbar for discharge is in log scale.
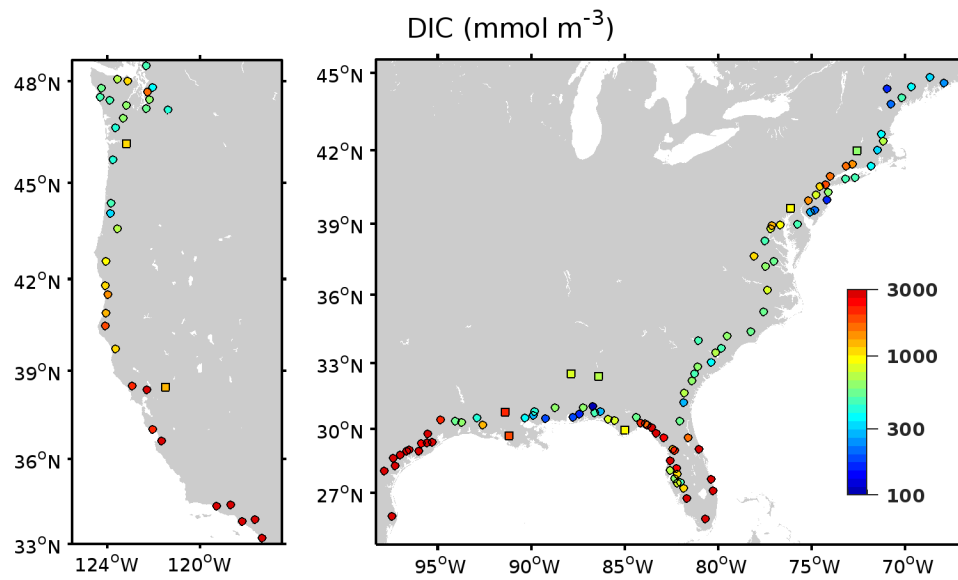
Figure S3. Long-term mean (colored dots and squares) of river DIC. Squares (dots) represent river stations with a mean discharge greater (smaller) than 500 m^3 s^{-1}. Colorbar is in logscale.

Table S1. Selected USGS station for the river chemistry dataset. Coordinates for the USGS stations and approximate location for the river mouths are reported.

ID	River name	USGS ID	Station latitude	Station longitude	Mouth latitude	Mouth longitude	Observation
1	Narraguagus	1022500	44.61	-67.94	44.52	-67.86	
2	Penobscot	1036390	44.83	-68.70	44.50	-67.79	
3	Kennebec	1049265	44.47	-69.68	43.75	-69.77	
4	Wild river	1054200	44.39	-70.98	43.75	-69.77	flows to Kennebec
5	Androscoggin	1059000	44.07	-70.21	43.75	-69.77	flows to Kennebec
6	Saco	1066000	43.81	-70.78	43.46	-70.38	
7	Merrimack	1100000	42.65	-71.30	42.81	-70.81	
8	Charles	1104615	42.36	-71.19	42.34	-71.01	
9	Blackstone	1112500	42.01	-71.50	41.72	-71.34	flows to Providence
10	Pawcatuck	1118500	41.38	-71.83	41.32	-71.85	
11	Connecticut	1184000	41.99	-72.61	41.29	-72.35	
12	Quinnipiac	1196500	41.45	-72.84	41.30	-72.88	
13	Housatonic	1205500	41.38	-73.17	41.17	-73.11	
14	Nissequogue	1304000	40.85	-73.22	40.91	-73.23	
15	Peconic	1304500	40.91	-72.69	41.11	-72.31	
16	Hackensack	1378500	40.95	-74.03	40.65	-74.09	
17	Rahway	1395000	40.62	-74.28	40.59	-74.21	
18	Raritan	1400500	40.56	-74.58	40.49	-74.28	
19	Swimming	1407500	40.32	-74.12	40.36	-74.07	flows to Navesink
20	Toms	1408500	39.99	-74.22	39.93	-74.11	
21	Great Egg Harbor	1411000	39.59	-74.85	39.29	-74.60	
22	Maurice	1411500	39.50	-75.08	39.21	-75.03	
23	Delaware	1463500	40.22	-74.78	39.47	-75.56	
24	Schuylkill	1474500	39.97	-75.19	39.47	-75.56	flows to Delaware
25	Choptank	1491000	39.00	-75.79	38.57	-76.02	
26	Susquehanna	1578310	39.66	-76.17	39.57	-76.09	
27	Patuxent	1594440	38.96	-76.69	38.31	-76.41	
28	Potomac	1646500	38.95	-77.13	38.05	-76.43	
29	Accotink creek	1654000	38.81	-77.23	38.05	-76.43	flows to Potomac
30	Rappahannock	1668000	38.31	-77.53	37.60	-76.39	

ID	River name	USGS ID	Station Latitude	Station Longitude	Mouth Latitude	Mouth Longitude	Observations
31	James	2035000	37.67	-78.09	36.99	-76.51	
32	Appomattox	2041650	37.23	-77.48	36.99	-76.51	flows to James
33	Chickahominy	2042500	37.44	-77.06	36.99	-76.51	flows to James
34	Roanoke	2081000	36.21	-77.38	35.95	-76.72	
35	Neuse	2089500	35.26	-77.59	34.98	-76.90	
36	Cape Fear	2105769	34.40	-78.29	33.97	-77.94	
37	Pee Dee	2131000	34.20	-79.55	33.27	-79.21	
38	Black	2136000	33.66	-79.84	33.27	-79.21	flows to Pee Dee
39	Saluda	2169000	34.01	-81.09	32.74	-79.86	flows to Congaree
40	Santee	2171500	33.45	-80.14	33.11	-79.28	
41	Edisto	2175000	33.03	-80.39	32.50	-80.35	
42	Coosawhatchie	2176500	32.84	-81.13	32.53	-80.85	
43	Savannah	2198500	32.53	-81.27	32.05	-80.87	
44	Ogeechee	2202500	32.19	-81.42	31.85	-81.09	
45	Altamaha	2226000	31.65	-81.83	31.32	-81.31	
46	Satilla	2228000	31.22	-81.87	30.97	-81.48	
47	St Marys	2231000	30.36	-82.08	30.72	-81.49	
48	St Johns	2244450	29.60	-81.61	30.40	-81.40	
49	Spruce creek	2248000	29.05	-81.05	29.09	-80.95	
50	Main canal	2253000	27.65	-80.41	27.65	-80.37	
51	St Lucie	2277000	27.11	-80.28	27.17	-80.18	
52	Tamiami	2288900	25.85	-80.98	25.77	-80.19	flows to Miami
53	Caloosahatchee	2292900	26.72	-81.69	26.53	-81.99	
54	Peace	2296750	27.22	-81.88	26.95	-82.04	
55	Myakka	2297155	27.49	-82.02	27.00	-82.25	
56	Manatee	2299950	27.47	-82.21	27.52	-82.63	
57	Little Manatee	2300500	27.67	-82.35	27.71	-82.47	
58	Alafia	2301500	27.87	-82.21	27.85	-82.40	
59	Hillsborough	2303000	28.15	-82.23	27.94	-82.46	
60	Rocky creek	2306774	28.07	-82.57	27.98	-82.60	

ID	River name	USGS ID	Station latitude	Station longitude	Mouth latitude	Mouth longitude	Observations
61	Weeki Washee	2310500	28.52	-82.57	28.53	-82.65	
62	Withlacoochee	2313000	28.99	-82.35	29.00	-82.76	
63	Rainbow	2313100	29.05	-82.45	29.00	-82.76	flows to Withlacoochee
64	Suwannee	2323500	29.59	-82.94	29.30	-83.16	
65	Steinhatchee	2324000	29.79	-83.32	29.66	-83.41	
66	Fenholloway	2324500	30.07	-83.56	29.98	-83.78	
67	Econfina	2326000	30.17	-83.82	30.04	-83.92	
68	Aucilla	2326512	30.23	-83.92	30.09	-83.99	
69	St Marks	2326900	30.27	-84.15	30.09	-84.19	
70	Ochlockonee	2329000	30.55	-84.38	29.97	-84.42	
71	Apalachicola	2359170	29.95	-85.02	29.71	-84.97	
72	Econfina	2359500	30.38	-85.56	30.04	-83.93	
73	Choctawhatchee	2366500	30.45	-85.90	30.39	-86.13	
74	Yellow	2368000	30.75	-86.63	29.00	-82.76	flows to Blackwater
75	Shoal	2368500	30.80	-86.31	29.00	-82.76	flows to Yellow
76	Blackwater	2369800	31.03	-86.71	29.00	-82.76	
77	Escambria	2375500	30.97	-87.23	30.54	-87.17	
78	Perdido	2376500	30.69	-87.44	30.44	-87.36	
79	Fishriver	2378500	30.55	-87.80	30.37	-87.84	
80	Alabama	2420000	32.41	-86.41	30.68	-87.98	flows to Mobile
81	Tombigbee	2467000	32.52	-87.88	30.68	-87.98	flows to Mobile
82	Pascagoula	2479000	30.98	-88.73	30.35	-88.57	
83	Wolf	2481510	30.48	-89.27	30.35	-89.29	
84	Pearl	2489500	30.79	-89.82	30.18	-89.52	
85	Bogue Chito	2492000	30.63	-89.90	30.18	-89.61	flows to Old Pearl
86	Mississippi	7373420	30.76	-91.40	29.27	-89.33	
87	Tangipahoa	7375500	30.51	-90.36	30.34	-90.28	flows to Lake Pontchartrain
88	Atchafalaya	7381600	29.69	-91.21	29.47	-91.27	
89	Mermentau	8012150	30.19	-92.59	29.73	-93.01	
90	Calcacieu	8015500	30.50	-92.92	29.76	-93.34	

ID	River name	USGS ID	Station latitude	Station longitude	Mouth latitude	Mouth longitude	Observations
91	Sabine	8030500	30.30	-93.74	29.68	-93.83	flows to Sabine Lake
92	Neches	8041000	30.36	-94.09	29.68	-93.83	flows to Sabine Lake
93	Trinity	8066500	30.43	-94.85	29.68	-94.96	
94	Buffalo bayou	8073600	29.76	-95.56	29.68	-94.96	
95	Chocolate bayou	8078000	29.37	-95.32	29.20	-95.18	
96	Brazos	8116650	29.35	-95.58	28.87	-95.37	
97	San Bernard	8117500	29.31	-95.89	28.84	-95.47	
98	Colorado	8162500	28.97	-96.01	28.65	-95.98	
99	Lavaca	8164000	28.96	-96.69	28.67	-96.58	
100	Navidad	8164500	29.03	-96.55	29.02	-96.56	
101	Guadalupe	8176500	28.79	-97.01	28.44	-96.78	
102	San Antonio	8188500	28.65	-97.38	28.44	-96.78	flows to Guadalupe
103	Mission	8189500	28.29	-97.28	28.15	-97.15	
104	Nueces	8211000	28.04	-97.86	27.83	-97.49	
105	Rio Grande	8475000	25.88	-97.45	25.95	-97.14	
106	San Luis Rey	11042000	33.22	-117.36	33.20	-117.39	
107	Santa Ana	11074000	33.88	-117.65	33.62	-117.96	
108	Los Angeles	11103000	33.82	-118.21	33.76	-118.20	
109	Santa Clara	11108500	34.40	-118.71	34.23	-119.26	
110	Ventura	11118500	34.35	-119.31	34.28	-119.31	
111	Salinas	11152500	36.63	-121.67	36.75	-121.80	
112	San Lorenzo	11160500	37.04	-122.07	36.96	-122.01	
113	Sacramento	11447650	38.46	-121.50	38.06	-121.80	
114	Napa	11458000	38.37	-122.30	38.08	-122.24	
115	Russian	11467000	38.51	-122.93	38.45	-123.13	
116	Elder	11475560	39.73	-123.64	38.06	-121.80	flows to Sacramento
117	Eel	11477000	40.49	-124.10	40.65	-124.31	
118	Mad	11481000	40.91	-124.06	40.97	-124.12	
119	Klamath	11530500	41.51	-123.98	41.54	-124.07	
120	Smith	11532500	41.79	-124.08	41.95	-124.20	

ID	River name	USGS ID	Station latitude	Station longitude	Mouth latitude	Mouth longitude	Observations
121	Willapa	12013500	46.65	-123.65	46.70	-123.83	
122	Chehalis	12031000	46.94	-123.31	46.97	-123.80	
123	Quinault	12039500	47.46	-123.89	47.34	-124.30	
124	Queets	12040500	47.54	-124.32	47.55	-124.35	
125	Hoh	12041200	47.81	-124.25	47.75	-124.44	
126	Elwha	12045500	48.06	-123.58	48.15	-123.57	
127	Dungeness	12048000	48.01	-123.13	48.15	-123.13	
128	Skokomish	12061500	47.31	-123.18	47.34	-123.12	
129	Puyayup	12101500	47.21	-122.33	47.27	-122.43	
130	Green	12103380	47.18	-121.39	47.58	-122.36	flows to Duwamish
131	Cedar	12119000	47.48	-122.20	47.67	-122.41	flows to Lake Washington
132	Thorton	12128000	47.70	-122.28	47.67	-122.41	flows to Lake Washington
133	Snohomish	12150800	47.83	-122.05	48.02	-122.21	
134	Skagit	12200500	48.45	-122.34	48.37	-122.50	
135	Columbia	14246900	46.18	-123.18	46.24	-124.02	
136	Nehalem	14301000	45.70	-123.76	45.69	-123.90	
137	Alsea	14306500	44.39	-123.83	44.42	-124.08	
138	Siuslaw	14307620	44.06	-123.88	44.02	-124.14	
139	Umpqua	14321000	43.59	-123.56	43.67	-124.21	
140	Rogue	14372300	42.58	-124.06	42.42	-124.43	

Table S2. Parameters for the linear regression of DIC vs alkalinity, and logarithm of discharge (logDisc) vs. alkalinity for the 12 rivers with the largest number of monthly records in the database.

River	DIC vs. alkalinity				Alkalinity vs. logDisc			
	Intercept [mmol m^{-3}]	Slope [mmol meq^{-1}]	R^2	N	Intercept [meq m^{-3}]	Slope [meq m^{-3} log(m^3 s^{-2})$^{-1}$]	R^2	N
Connecticut	90.2	0.983	0.76	527	1,334.4	-317.7	0.49	544
Delaware	112.8	0.917	0.93	499	2,002.2	-510,1	0.44	639
Schuylkill	131.8	0.986	0.93	241	2,082.4	-533.3	0.35	450
Choptank	89.8	1.101	0.70	367	454.2	-251.6	0.42	308
Susquehanna	39.1	1.013	0.98	405	2,454.2	-527.1	0.50	407
Neuse	157.0	0.962	0.56	421	924.5	-288.8	0.51	347
Mississippi	180.0	0.965	0.94	544	6,124.1	-976.3	0.36	711
Atchafalaya	145.1	0.974	0.97	395	6,904.6	-1,324.7	0.43	426
Santa Ana	50.1	1.016	0.99	493	5,372.2	-1,628.2	0.39	490
Sacramento	75.2	0.984	0.96	350	2,664.3	-545.4	0.34	402
Eel	79.5	0.976	0.99	264	2,986.3	-619.8	0.69	369
Klamath	81.3	0.968	0.98	250	2,595.4	-477.5	0.55	288