

ESTIMATED FRESHWATER WITHDRAWALS AND USE IN NEW YORK, 1985

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INTRODUCTION

Water use in New York can be divided into five categories: public supply, domestic and commercial, industrial and mining, agriculture and irrigation, and thermoelectric powerplant cooling. This report presents a summary of estimated freshwater withdrawals and use in New York in 1985. Total estimated withdrawals in all categories of use are depicted by county in figures 1A and 1B; estimated withdrawals for each of five individual categories are depicted separately in figures 3 through 7. Locations of the counties and major surface-water bodies are shown in figure 2. Figure 8 summarizes the estimated distribution and use of freshwater within the State.

GROUND-WATER AND SURFACE-WATER WITHDRAWALS

Ground-water withdrawal is the removal of water from the ground through a well or through a spring. The water is taken from pores in unconsolidated rocks and fractures in bedrock, and brought to the surface for use.

Ground-water withdrawals in 1985 accounted for 12.1 percent of all freshwater withdrawals in New York (fig. 1A). Long Island relies heavily on ground water; other users of considerable quantities of ground-water are widely distributed throughout the State. Figure 1A depicts total ground-water withdrawals in New York in 1985 by county; table 1A gives the amounts, in Mgal/d (millions of gallons per day), for each category.

Surface-water withdrawal is the diversion of water from an open body of water, such as a river or lake. Surface-water withdrawals accounted for 87.9 percent of all freshwater withdrawals in New York in 1985 (fig. 1B). Major surface-water withdrawals are made in counties bordering Lakes Ontario and Erie, where the water is needed for powerplant cooling, and in southeastern New York, which contains reservoirs of the New York City water-supply system. Figure 1B depicts total surface-water withdrawals in New York in 1985 by county; table 1B gives the amounts, in Mgal/d, for each category.

Figure 1A--Ground-water withdrawals, in million gallons per day

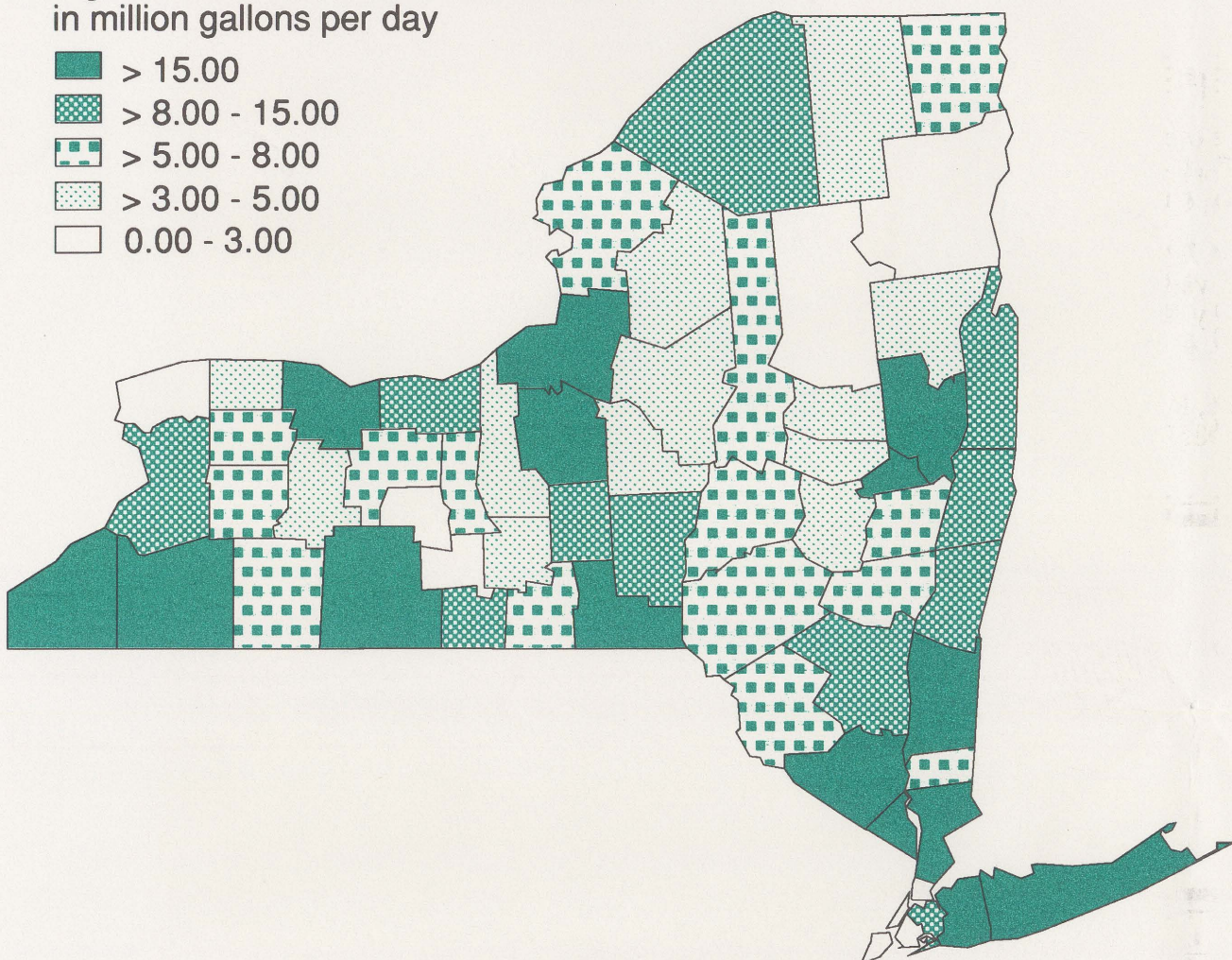
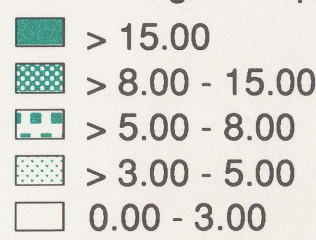


Table 1A--Ground-water withdrawals, in million gallons per day

County	Public Supply	Domestic and Commercial	Industrial and Mining	Agriculture and Irrigation	Thermoelectric Power	Total
Albany	4.29	1.97	1.21	0.30	0.00	7.77
Allegany	2.98	2.71	2.04	0.09	0.00	7.82
Bronx	0.00	0.00	0.00	0.00	0.00	0.00
Broome	18.18	4.46	2.54	0.19	0.00	25.37
Cattaraugus	7.28	4.44	2.77	0.09	0.00	14.58
Cayuga	1.09	2.82	0.17	0.37	0.00	4.45
Chautauqua	8.25	4.74	3.26	0.39	0.00	16.64
Chemung	6.34	2.76	1.90	0.11	0.00	11.11
Chenango	1.86	3.20	6.18	0.36	0.00	11.60
Clinton	0.44	3.89	0.88	0.29	0.00	5.50
Columbia	4.13	3.21	0.40	0.00	0.00	9.82
Cortland	3.40	2.13	2.39	0.31	0.00	8.23
Delaware	2.88	2.56	1.26	0.45	0.00	7.15
Dutchess	7.78	11.64	3.30	0.20	0.00	22.92
Erie	10.59	10.04	0.24	0.55	0.00	12.47
Essex	0.85	0.82	0.18	0.07	0.00	1.92
Franklin	1.51	2.13	0.33	0.41	0.00	4.38
Fulton	0.49	2.27	0.50	0.07	0.00	3.33
Genesee	2.82	2.96	1.59	0.27	0.00	7.64
Greene	0.31	2.90	2.73	0.06	0.00	6.00
Hamilton	0.07	0.12	0.00	0.00	0.00	0.19
Herkimer	2.31	1.91	1.19	0.35	0.00	5.76
Jefferson	1.67	2.85	0.43	0.59	0.00	5.54
Kings	0.00	0.00	0.00	0.00	0.00	0.00
Lewis	1.34	1.34	1.18	0.39	0.00	3.21
Livingston	0.84	2.44	0.46	0.29	0.00	4.03
Madison	0.70	2.72	0.26	0.47	0.00	4.15
Monroe	6.34	4.19	5.48	0.22	0.00	16.23
Montgomery	0.81	2.49	0.04	0.34	0.00	3.68
Nassau	225.28	16.31	19.06	0.01	0.00	260.66
New York	0.00	0.00	0.00	0.00	0.00	0.00
Niagara	0.10	2.20	0.08	0.15	0.00	2.53
Oneida	2.06	1.22	0.40	0.49	0.00	4.17
Onondaga	3.87	9.68	0.30	0.80	0.00	14.65
Ontario	1.81	2.23	1.33	0.19	0.00	5.56
Orange	8.49	11.02	21.11	1.10	0.00	41.72
Orleans	0.29	1.82	0.86	0.16	0.00	3.13
Oswego	0.00	5.16	16.82	0.43	0.00	28.41
Otsego	0.93	3.23	0.58	0.42	0.00	5.16
Putnam	1.18	5.27	0.69	0.01	0.00	7.15
Queens	0.00	6.22	4.24	0.00	0.00	10.46
Rensselaer	2.01	5.88	4.79	0.18	0.00	12.86
Richmond	0.00	0.00	0.00	0.00	0.00	0.00
Rockland	23.92	4.00	2.73	0.00	0.00	30.65
St. Lawrence	2.37	5.37	0.84	0.67	0.00	9.25
Saratoga	6.78	6.96	18.68	0.19	0.00	32.61
Schenectady	22.93	2.86	39.45	0.00	0.00	65.31
Schoharie	0.27	4.10	0.30	0.22	0.00	4.89
Schuyler	0.33	2.26	0.05	0.08	0.00	2.72
Seneca	0.17	2.88	2.15	0.11	0.00	5.31
Steuben	6.71	9.70	1.26	0.00	0.00	18.13
Suffolk	110.14	24.79	46.38	16.18	0.00	197.49
Sullivan	3.23	3.40	0.52	0.14	0.00	7.29
Tioga	2.78	3.41	1.36	0.12	0.00	7.66
Tompkins	1.09	3.18	0.16	0.17	0.00	4.60
Ulster	2.47	7.86	1.46	0.36	0.00	12.15
Warren	0.69	1.40	2.50	0.00	0.00	4.60
Wayne	1.99	2.78	3.66	0.30	0.00	8.73
Westchester	7.41	2.99	8.33	0.07	0.00	18.80
Wilmington	1.03	2.43	1.03	0.00	0.00	5.12
Yates	0.16	1.32	1.03	0.09	0.00	2.60
State Total	534.91	255.83	272.46	31.82	0.00	1,095.02

Figure 1B--Surface-water withdrawals, in million gallons per day

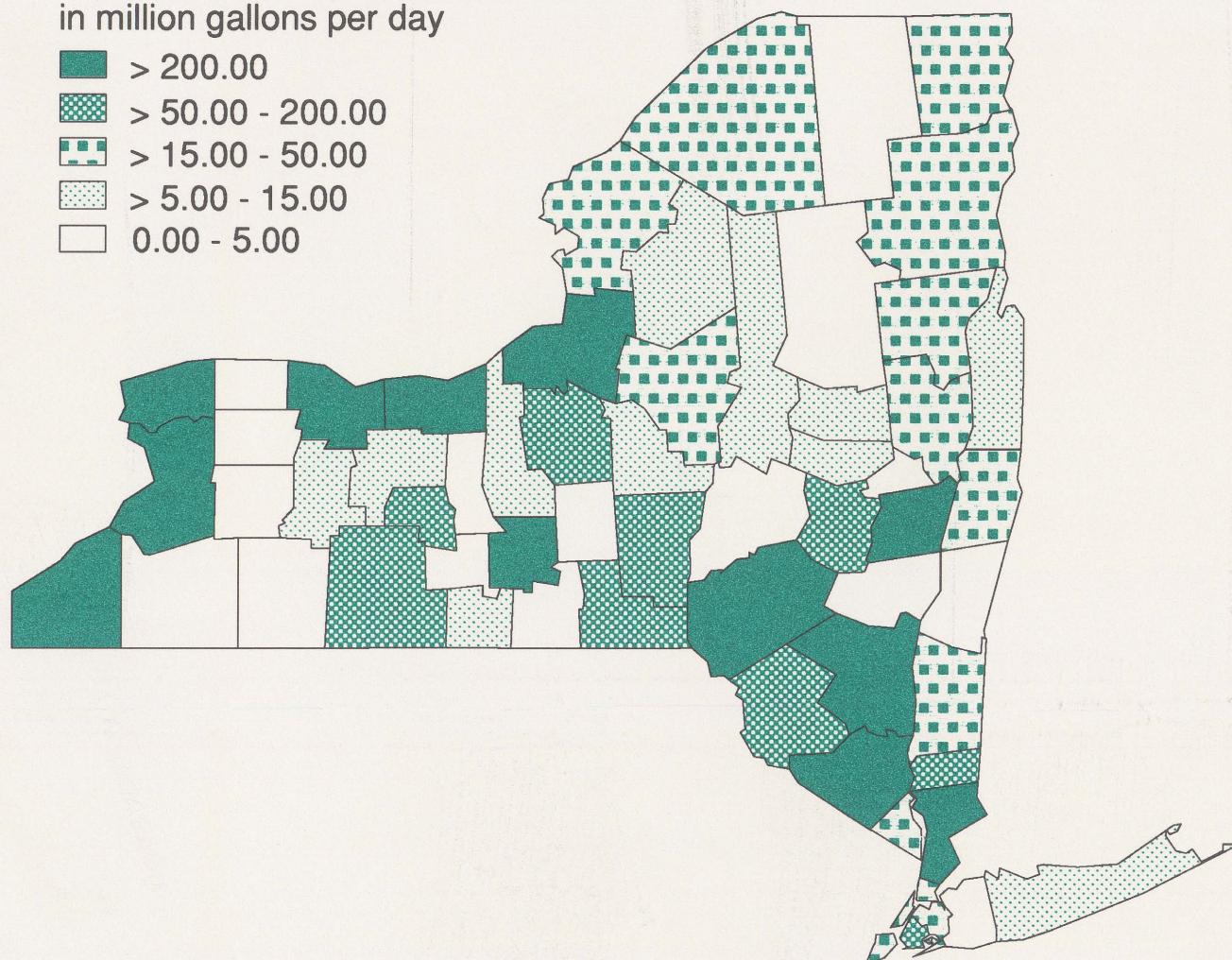
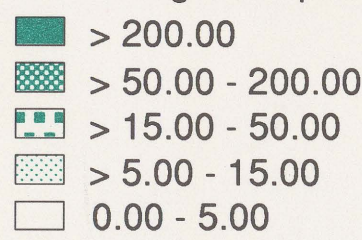


Table 1B--Surface-water withdrawals, in million gallons per day

County	Public Supply	Domestic and Commercial	Industrial and Mining	Agriculture and Irrigation	Thermoelectric Power	Total
Albany	45.91	4.59	27.06	0.53	297.63	375.72
Allegany	1.02	0.10	0.83	0.12	0.00	2.07
Bronx	0.00	0.00	46.72	0.00	0.00	46.72
Broome	11.50	1.12	1.56	0.12	70.00	84.30
Cattaraugus	1.07	0.11	2.51	0.32	4.01	4.01
Cayuga	9.09	0.91	0.69	0.56	0.00	11.25
Chautauqua	7.79	0.78	9.27	0.53	489.58	507.95
Chemung	5.88	0.59	0.62	0.08	0.00	7.17
Chenango	1.45	0.15	1.37	0.20	132.82	135.99
Clinton	7.32	0.73	14.57	0.59	0.00	23.21
Columbia	1.48	0.15	0.15	1.31	0.00	3.09
Cortland	0.00	0.00	0.00	0.18	0.00	0.18
Delaware	565.17	0.06	0.25	0.27	0.00	565.75
Dutchess	10.94	1.09	10.12	0.45	0.00	22.60
Erie	162.62	0.00	22.35	0.77	566.66	752.40
Essex	3.42	0.34	14.45	0.04	0.00	18.25
Franklin	1.77	0.18	0.39	0.21	0.00	2.55
Fulton	0.62	0.62	3.86	0.06	0.00	5.16
Genesee	2.07	0.21	1.12	0.54	0.00	3.94
Greene	2.09	0.21	0.00	0.03	0.00	2.33
Hamilton	0.25	0.03	0.01	0.00	0.00	0.29
Herkimer	7.16	0.72	0.98	0.19	0.00	9.05
Jefferson	8.10	0.81	19.62	0.43	0.00	28.96
Kings	0.00	0.00	149.52	0.45	0.00	149.97
Lewis	1.72	0.17	7.97	0.21	0.00	10.07
Livingston	4.88	0.49	2.91	0.49	0.00	8.77
Madison	3.27	0.33	1.20	0.21	0.00	5.01
Monroe	7.41	64.61	0.78	259.60	616.46	948.86
Montgomery	9.39	0.94	0.61	0.29	0.00	11.23
Nassau	0.00	0.00	2.05	0.14	0.00	2.19
New York	0.00	0.00	0.00	0.00	48.54	48.54
Niagara	56.87	5.69	46.05	0.44	97.03	206.08
Oneida	33.83	3.38	7.90	0.27	0.00	45.38
Onondaga	73.85	7.38	52.28	0.41	0.00	134.92
Ontario	0.56	0.56	4.83	0.39	0.00	11.38
Orange	14.80	1.48	0.29	1.45	981.96	999.98
Orleans	2.40	0.24	0.02	0.28	0.00	2.94
Oswego	9.65	0.96	0.06	3.53	855.68	879.88
Otsego	3.42	0.34	0.70	0.29	0.00	4.75
Putnam	112.30	0.12	0.00	0.01	0.00	112.43
Queens	0.00	0.00	16.95	0.00	0.00	16.95
Rensselaer	16.23	1.62	1.59	0.88	0.00	20.32
Richmond	0.00	4.85	11.97	0.00	0.00	16.82
Rockland	6.07	0.61	9.34	0.00	0.00	16.02
St. Lawrence	9.32	0.93	27.90	0.57	0.00	38.72
Saratoga	5.52	0.55	15.22	0.13	0.00	21.42
Schenectady	0.14	0.01	0.00	0.07	0.00	0.22
Schoharie	149.17	0.00	0.03	1.19	0.00	150.39
Schuyler	0.26	0.03	4.10	0.04	0.00	4.43
Seneca	2.14	0.21	0.00	0.06	0.00	2.41
Steuben	2.73	0.27	4.15	0.46	95.05	102.66
Suffolk	12.24	0.00	0.09	1.04	0.00	13.37
Sullivan	166.53	0.21	0.21	0.08	0.00	167.03
Tioga	0.00	0.00	0.00	0.16	0.00	0.16
Tompkins	5.93	0.59	0.48	0.13	339.74	346.87
Ulster	562.64	0.67	4.32	1.67	0.00	569.30
Warren	8.91	0.89	13.16	0.00	0.00	22.96
Washington	2.12	0.21	8.92	0.67	0.00	11.92
Wayne	5.50	0.55	0.19	0.78	378.15	385.17
Westchester	101.72	10.17	114.39	0.17	0.00	226.45
Wilmington	0.19	1.48	0.19	0.48	0.00	4.08
Yates	0.75	0.19	1.31	0.05	143.09	145.39
State Total	2,328.21	65.74	809.84	25.35	4,716.99	7,946.13

Figure 3A--Ground-water withdrawals, in million gallons per day

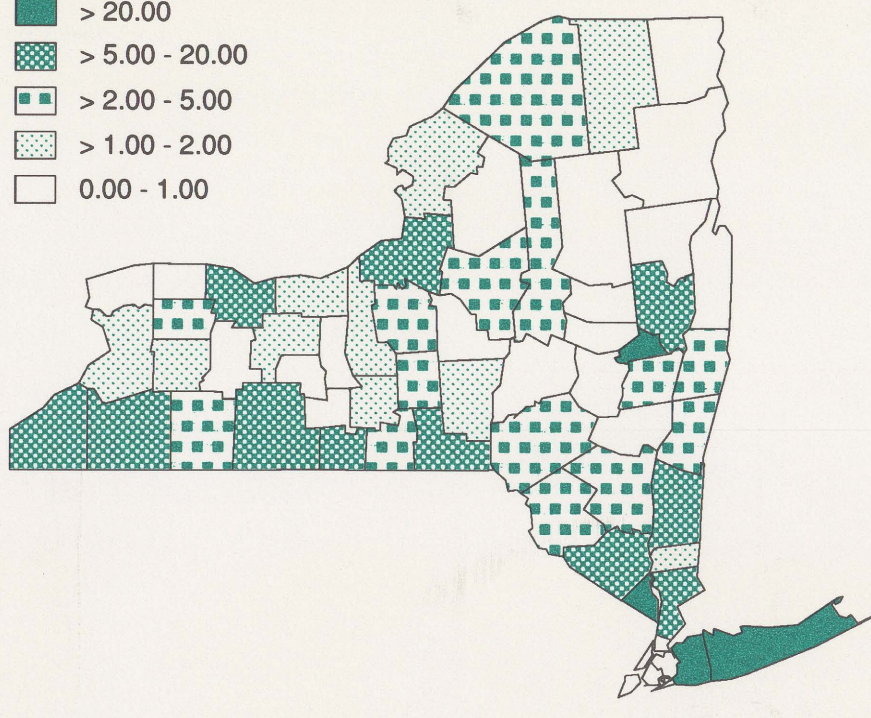


Figure 4A--Ground-water withdrawals, in million gallons per day

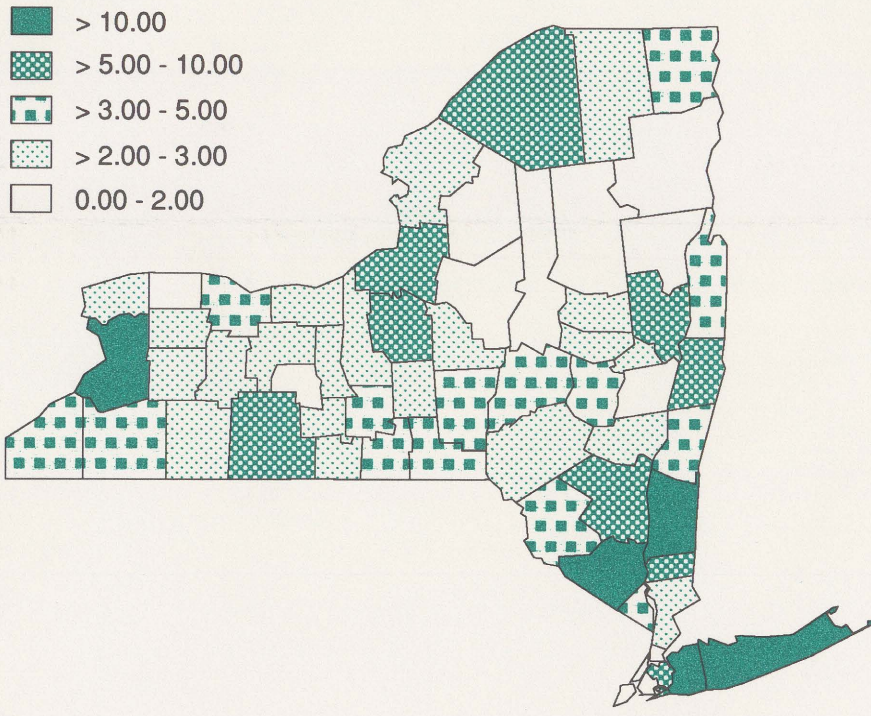
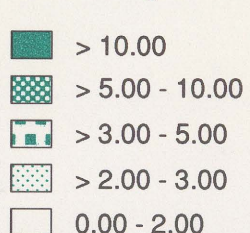


Figure 5A--Ground-water withdrawals, in million gallons per day

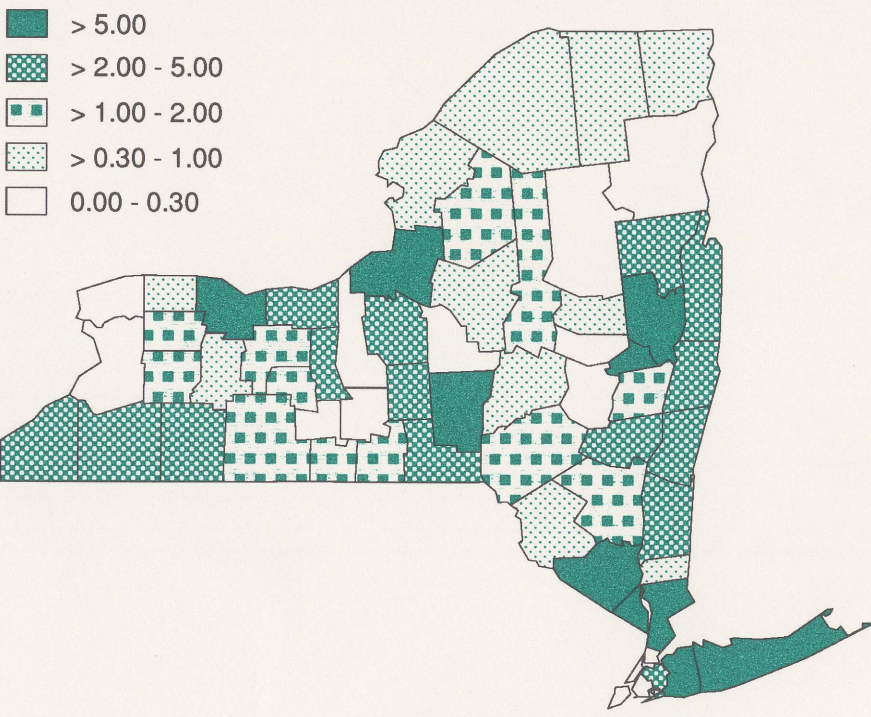


Figure 6A--Ground-water withdrawals, in million gallons per day

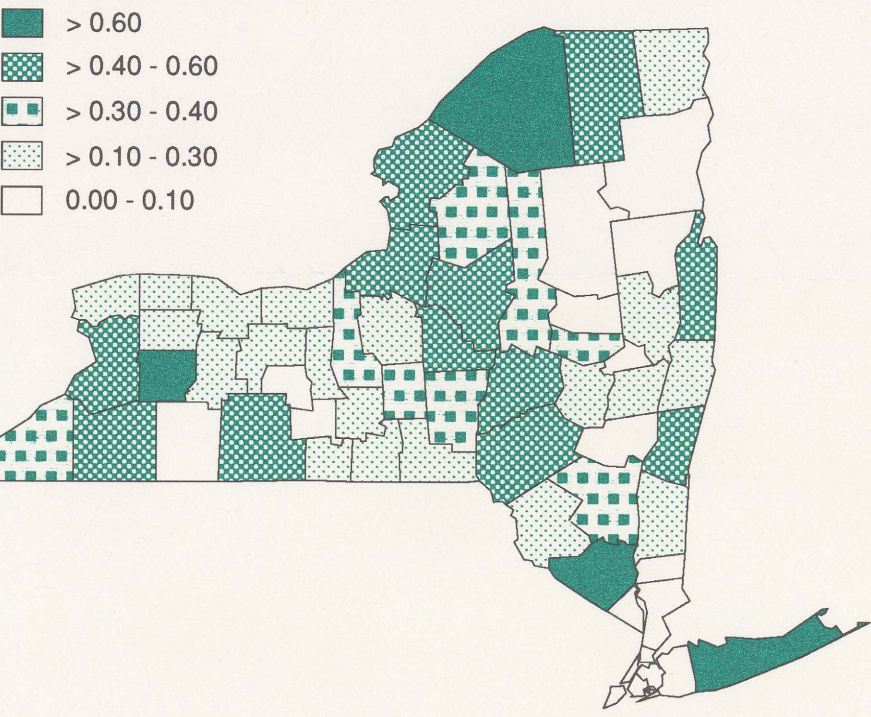
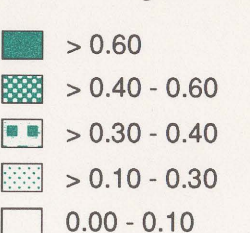


Figure 3B--Surface-water withdrawals, in million gallons per day

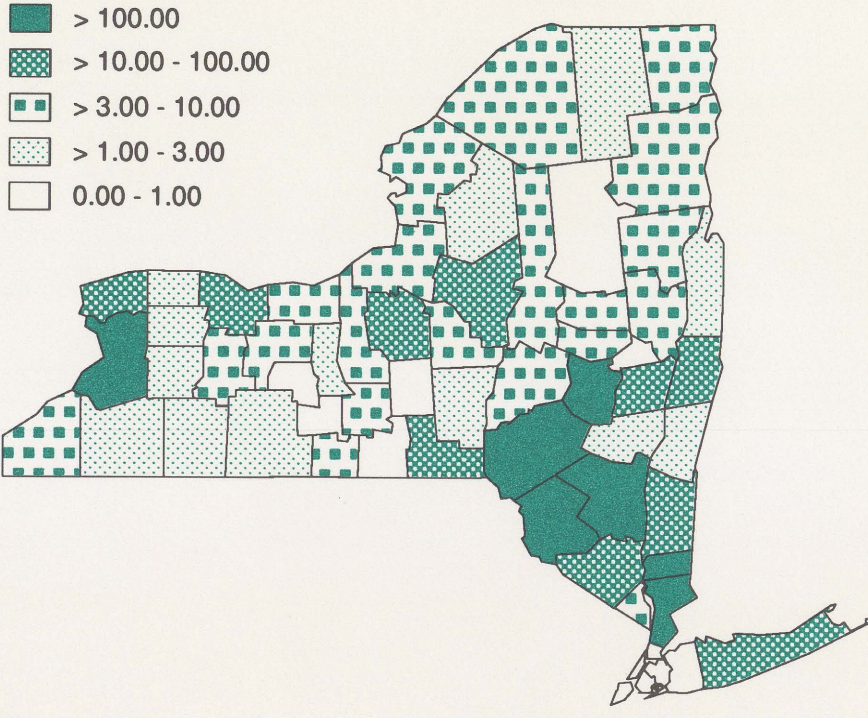
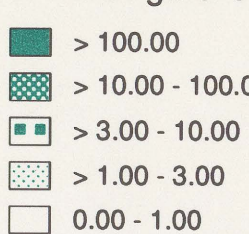


Figure 4B--Surface-water withdrawals, in million gallons per day

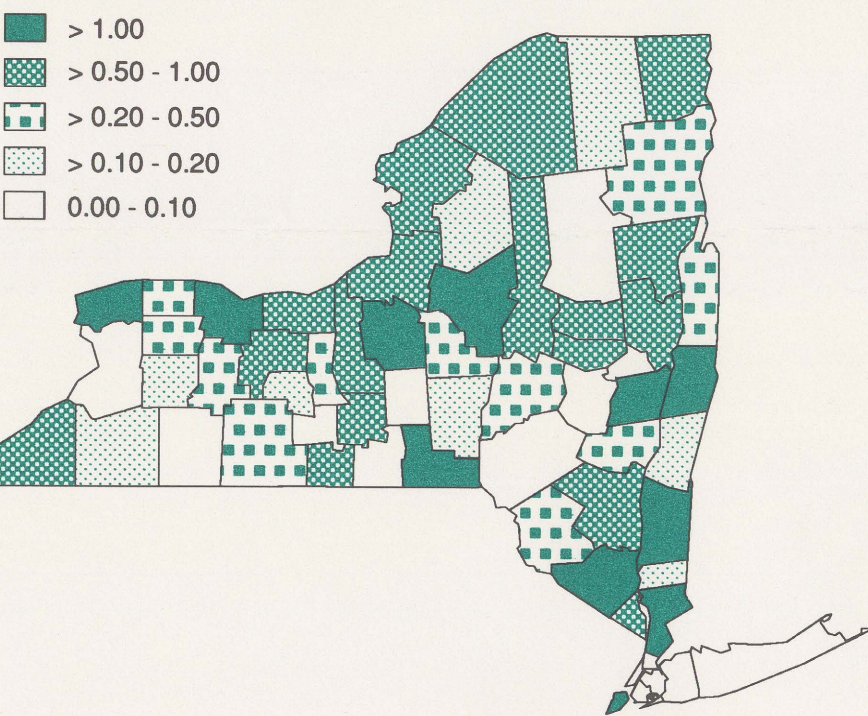
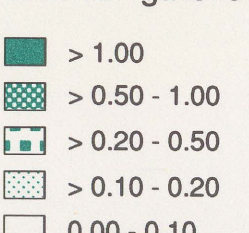


Figure 5B--Surface-water withdrawals, in million gallons per day

