SEASONAL WATER DISCHARGES AND NUTRIENT AND SUSPENDED-SEDIMENT LOADS AND YIELDS

Seasonal loads for all parameters and all sites are listed in Table 24 for loads and Table 25 for percentages (high values in boldface type). For the purposes of this project, January through March is winter, April through June is spring, July through September is summer, and October through December is fall. As a general note, nutrient and SS levels increase with increases in flow. 2005 and LTM nutrient and SS yields are shown in Figures 7–9 for group A sites.

Table 24. Seasonal Mean Water Discharges and Loads of Nutrients and Suspended Sediment, Calendar Year 2005

Station	Season	Mean Water Discharge	Total Nitrogen as N	Dissolved Nitrogen as N	Total Ammonia as N	Dissolved Ammonia as N	Total Organic Nitrogen as N	Dissolved Organic Nitrogen as N	Total Nitrate Plus Nitrite as N	Dissolved Nitrate Plus Nitrite as N	Total Phosphorus as P	Dissolved Phosphorus as P	Dissolved Ortho-Phosphate as P	Total Organic Carbon	Suspended Sediment ***
		cfs	thousands of pounds												
Towanda	Winter	**18,810**	**10,585**	**9,020**	**635**	**567**	2,541	**1,523**	**7,654**	**7,535**	924	303	230	27,223	1,124,485
	Spring	15,629	8,045	6,024	415	357	**2,928**	1,323	4,604	4,494	**1,203**	231	154	26,783	**3,033,391**
	Summer	1,732	705	516	29	27	271	142	383	367	64	37	29	3,050	10,292
	Fall	16,749	8,557	7,016	632	528	2,019	1,216	6,159	5,910	967	**339**	**242**	**32,019**	1,005,684
Danville	Winter	**28,330**	**16,665**	**14,604**	**1,174**	**1,015**	4,103	**2,403**	**12,004**	**11,820**	1,866	**635**	**477**	**40,604**	1,374,749
	Spring	22,547	11,288	8,706	682	583	**4,288**	1,937	6,526	6,455	**2,013**	443	297	37,379	**2,434,763**
	Summer	2,549	912	686	43	41	409	208	455	463	85	49	41	4,191	9,148
	Fall *	21,929	11,603	9,788	837	665	1,834	1,068	8,411	8,106	1,227	623	399	39,704	608,996
Lewisburg	Winter	**19,192**	**10,044**	**8,971**	**594**	**525**	**1,885**	**1,284**	**8,073**	**8,038**	**594**	**222**	**166**	**17,896**	**258,796**
	Spring	9,855	4,560	4,013	210	206	893	592	3,577	3,548	268	92	68	9,034	138,338
	Summer	1,787	879	810	41	36	137	114	739	734	34	24	21	1,852	2,715
	Fall	10,686	5,665	5,075	383	308	815	567	5,116	5,090	352	157	130	11,933	134,732
Newport	Winter	**8,708**	**8,798**	**8,068**	**239**	**196**	**1,153**	**679**	**7,715**	**7,609**	**286**	**115**	**86**	**11,106**	**188,778**
	Spring	3,725	3,168	2,921	95	79	446	283	2,759	2,704	95	42	29	4,518	46,930
	Summer	1,015	722	671	33	25	113	84	587	567	26	16	12	1,550	3,988
	Fall	3,010	3,299	3,117	114	83	283	195	3,168	3,105	81	44	32	4,182	31,682
Marietta	Winter	**68,236**	**59,851**	**54,963**	**3,273**	**2,573**	**10,407**	**6,516**	**50,448**	**49,394**	**3,275**	**728**	**526**	**84,996**	2,213,763
	Spring	46,732	32,910	28,336	1,666	1,307	6,801	3,610	24,598	23,942	2,759	443	269	63,441	**2,571,460**
	Summer	7,744	4,906	4,513	186	161	912	588	3,459	3,403	174	83	49	11,448	31,315
	Fall	41,286	41,124	38,643	2,224	1,655	5,911	3,887	37,458	36,603	1,615	465	336	60,133	725,689
Conestoga	Winter	**1,070**	**4,226**	**4,083**	68	64	**637**	**654**	**3,604**	**3,508**	127	57	35	2,027	**111,492**
	Spring	830	3,035	2,942	44	40	458	455	2,699	2,604	108	43	26	1,607	97,532
	Summer	313	1,189	1,212	9	9	106	136	1,193	1,152	30	22	16	557	102,501
	Fall **	873	3,366	3,170	**83**	**72**	559	454	2,854	2,788	**288**	**92**	**59**	**2,266**	62,342

* LTM values were used for Danville for October due to model related issues

** LTM values were used for Conestoga for December due to model related issues

*** Values for Suspended Sediment at Conestoga for 2005 were taken from USGS analysis due to model related issues

Table 25. Seasonal Mean Water Discharge and Nutrients and Suspended Sediment Load Percentages, Calendar Year 2005

Station	Season	Mean Water Discharge	Total Nitrogen as N	Dissolved Nitrogen as N	Total Ammonia as N	Dissolved Ammonia as N	Total Organic Nitrogen as N	Dissolved Organic Nitrogen as N	Total Nitrate Plus Nitrite as N	Dissolved Nitrate Plus Nitrite as N	Total Phosphorus as P	Dissolved Phosphorus as P	Dissolved Ortho-Phosphate as P	Total Organic Carbon	Suspended Sediment
		%													
Towanda	Winter	36	38	40	37	38	33	36	41	41	29	33	35	31	22
	Spring	29	29	27	24	24	38	32	24	25	38	26	24	30	59
	Summer	3	3	2	2	2	3	3	2	2	2	4	4	3	< 0.1
	Fall	32	31	31	37	36	26	29	33	32	31	37	37	36	19
Danville	Winter	38	41	43	43	44	39	43	43	44	36	36	39	33	31
	Spring	30	28	26	25	25	40	34	24	24	39	25	25	31	55
	Summer	3	2	2	1	2	4	4	2	2	2	3	3	3	< 0.1
	Fall	29	29	29	31	29	17	19	31	30	23	36	33	33	14
Lewisburg	Winter	46	47	48	49	49	50	50	46	46	48	45	43	44	48
	Spring	24	22	21	17	19	24	23	21	21	21	18	18	22	26
	Summer	4	4	4	3	3	4	4	4	4	3	5	5	5	1
	Fall	26	27	27	31	29	22	22	29	29	28	32	34	29	25
Newport	Winter	53	55	55	49	51	58	55	54	55	59	53	54	52	70
	Spring	23	20	20	20	21	22	23	20	19	19	19	18	21	17
	Summer	6	5	5	7	6	6	7	4	4	5	8	8	7	1
	Fall	18	21	21	24	22	14	16	22	22	17	20	20	20	12
Marietta	Winter	42	43	43	44	45	43	45	44	44	42	42	45	39	40
	Spring	28	24	22	23	23	28	25	21	21	35	26	23	29	46
	Summer	5	3	4	3	3	4	4	3	3	2	5	4	5	1
	Fall	25	30	31	30	29	25	26	32	32	21	27	28	27	13
Conestoga	Winter	35	36	36	33	34	36	38	35	35	23	27	26	31	30
	Spring	27	26	26	22	22	26	27	26	26	20	20	19	25	26
	Summer	10	10	10	4	5	6	8	11	11	5	10	12	9	27
	Fall	28	28	28	41	39	32	27	28	28	52	43	43	35	17

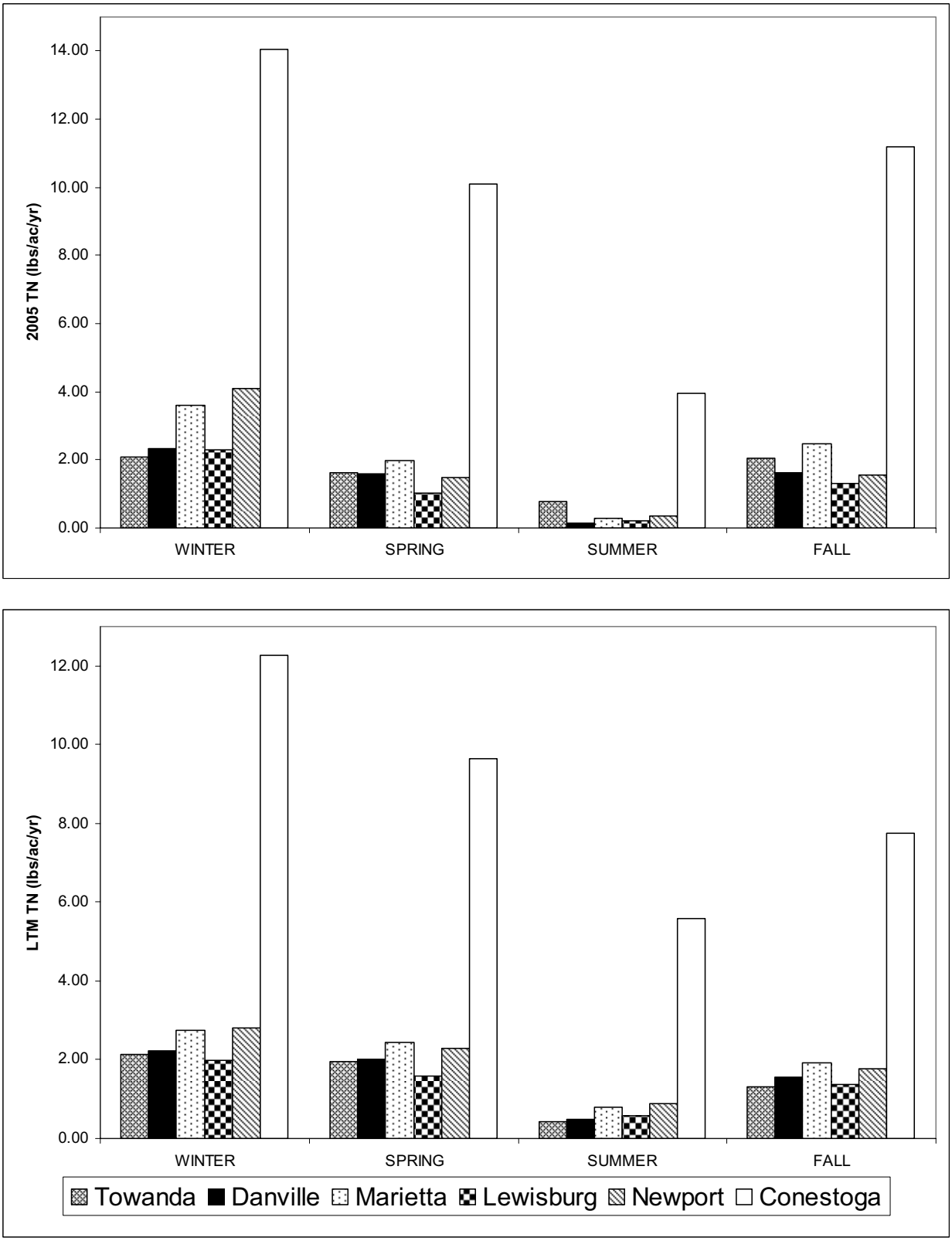

Figure 7. Comparison of Seasonal Yields of Total Nitrogen (TN) at Towanda, Danville, Marietta, Lewisburg, Newport, and Conestoga, Pa.

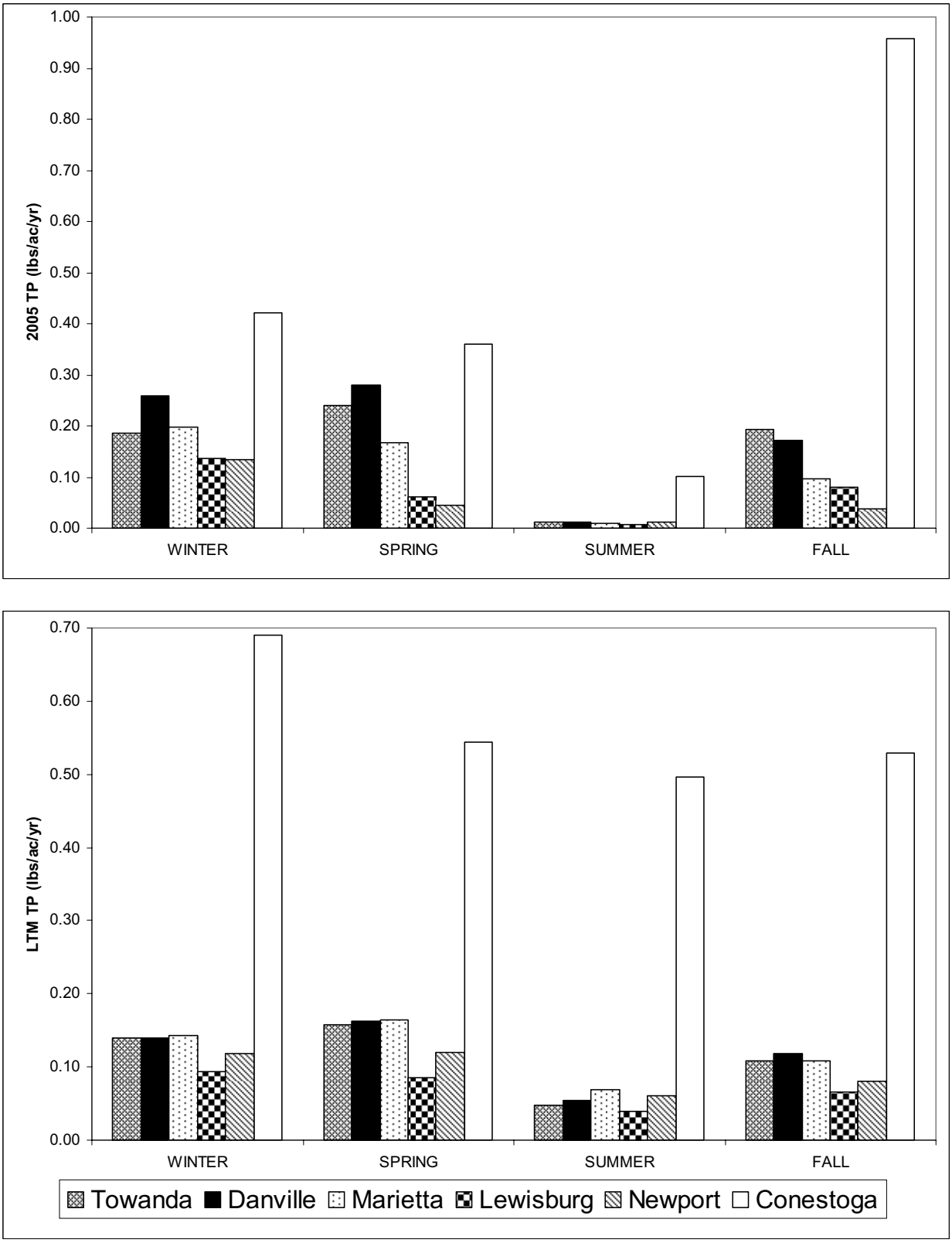

Figure 8. Comparison of Seasonal Yields of Total Phosphorus (TP) at Towanda, Danville, Marietta, Lewisburg, Newport, and Conestoga, Pa.

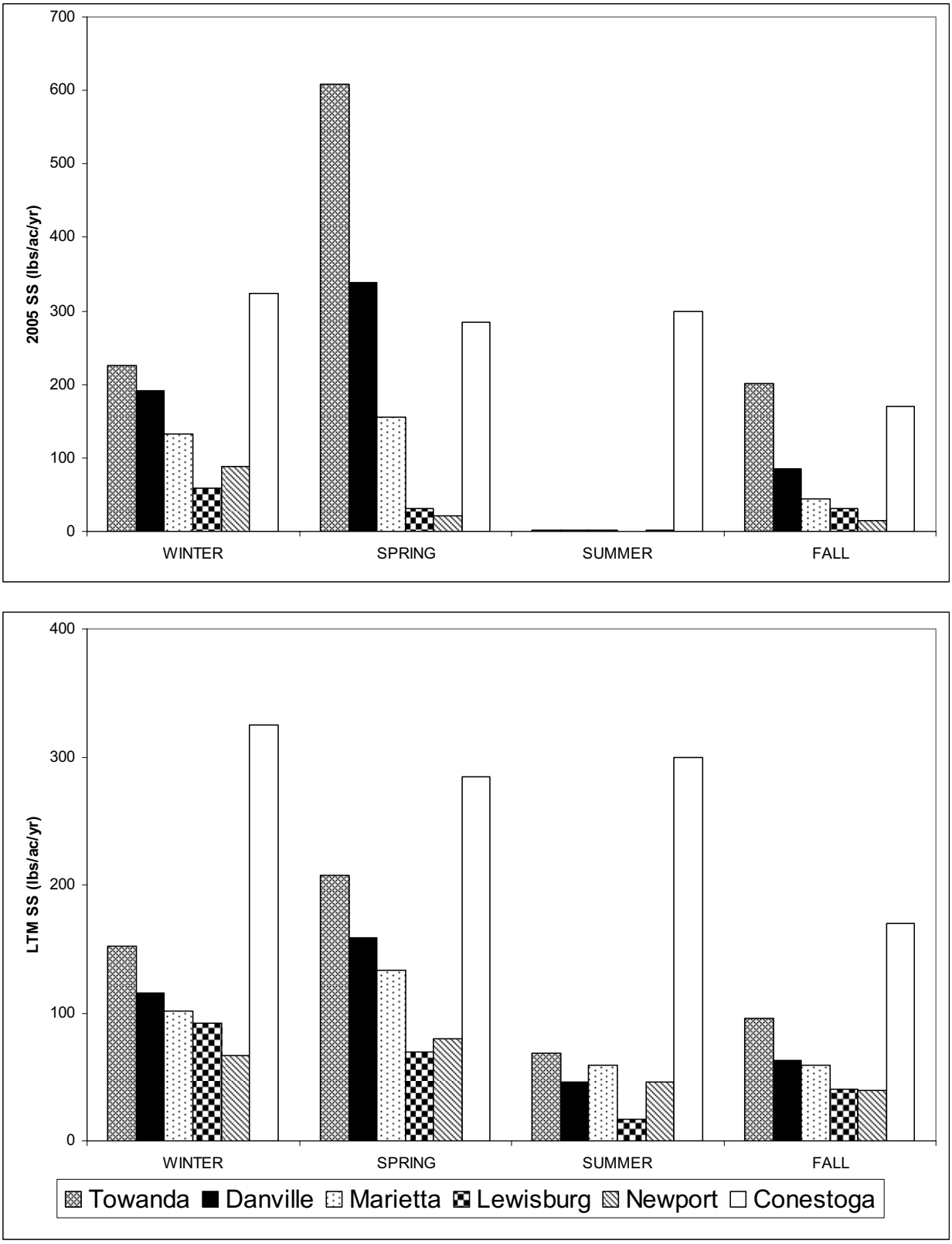

Figure 9. Comparison of Seasonal Yields of Suspended Sediment (SS) at Towanda, Danville, Marietta, Lewisburg, Newport, and Conestoga, Pa.