APPENDIX F. AVGWLF Model Output

GWLF Total Loads for littleneshold

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	1104	7.32	192.28	21.34	2136.37	2200.39	242.49	255.76
CROPLAND	3235	12.41	5248.78	582.61	10624.63	12372.47	1202.79	1565.18
CONIF_FOR	120	6.3	0.98	0.11	14.35	14.68	0.45	0.52
MIXED_FOR	774	6.3	9.18	1.02	92.58	95.63	2.92	3.56
DECID_FOR	2802	6.3	42.92	4.76	335.14	349.43	10.58	13.55
UNPAVED_RD	3	18.6	13.41	1.49	16.19	20.65	1.12	2.04
TRANSITION	7	18.6	16.3	1.81	37.77	43.19	2.6	3.73
LO_INT_DEV	2284	13.42	521.6	57.9	0.0	634.48	0.0	84.6
HI_INT_DEV	712	32.8	121.38	13.47	0.0	642.66	0.0	71.26
Stream Bank				2807.3		4210.9		873.1
Groundwater					40800.25	40800.25	2006.28	2006.28
Point Sources					117864	117864	13426	13426
Septic Syst.					9828.23	9828.23	95.42	95.42
Totals	11041	11.4	6166.8	3491.8	181749.49	189076.99	16990.65	18400.96

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Model Output for Little Neshaminy, Year 1992 Land Use Conditions

GWLF Total Loads for littleneshnew

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	1037	7.32	177.36	19.69	2006.71	2065.78	227.77	240.02
CROPLAND	2795	12.41	4298.23	477.1	9179.55	10610.86	1039.2	1335.95
CONIF_FOR	119	6.3	0.98	0.11	14.23	14.56	0.45	0.52
MIXED_FOR	771	6.3	9.17	1.02	92.22	95.27	2.91	3.55
DECID_FOR	2686	6.3	41.28	4.58	321.26	335.01	10.15	12.99
UNPAVED_RD	3	18.6	13.47	1.49	16.19	20.67	1.12	2.05
TRANSITION	479	18.6	3372.54	374.35	2584.37	3707.42	178.23	411.08
LO_INT_DEV	2385	13.42	555.32	61.64	0.0	705.36	0.0	94.05
HI_INT_DEV	728	32.8	126.28	14.02	0.0	683.63	0.0	75.81
Stream Bank				2837.4		4256.1		882.4
Groundwater					40992.16	40992.16	2015.72	2015.72
Point Sources					117864	117864	13426	13426
Septic Syst.					9828.23	9828.23	95.42	95.42
Totals	11003	11.8	8594.6	3791.4	182898.91	191179.01	16996.95	18595.57

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Model Output for Little Neshaminy, Year 2000 Land Use Conditions

GWLF Total Loads for pinerunold

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	266	7.32	71.68	11.47	514.74	549.14	58.43	65.89
CROPLAND	1220	12.41	3605.58	576.89	4006.82	5737.49	453.6	829.16
CONIF_FOR	35	6.3	0.31	0.05	4.19	4.33	0.13	0.16
MIXED_FOR	251	6.3	4.89	0.78	30.02	32.37	0.95	1.46
DECID_FOR	844	6.3	23.62	3.78	100.95	112.28	3.19	5.65
UNPAVED_RD	1	18.6	5.15	0.82	5.4	7.87	0.37	0.91
TRANSITION	16	18.6	68.88	11.02	86.33	119.39	5.95	13.13
LO_INT_DEV	255	13.42	43.97	7.03	0.0	8.61	0.0	1.15
HI_INT_DEV	86	32.8	18.12	2.9	0.0	16.7	0.0	1.85
Stream Bank				363.8		545.7		118.4
Groundwater					11250.02	11250.02	553.2	553.2
Point Sources					6	6	0	0
Septic Syst.					5094.12	5094.12	21.3	21.3
Totals	2974	10.3	3842.2	978.6	21098.58	23484.01	1097.12	1612.27

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Model Output for Pine Run, Year 1992 Land Use Conditions

GWLF Total Loads for pinerunnew

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	247	7.32	67.33	10.84	477.97	510.5	54.25	61.31
CROPLAND	826	12.41	2101.63	338.36	2712.81	3727.9	307.11	527.38
CONIF_FOR	35	6.3	0.31	0.05	4.19	4.34	0.13	0.16
MIXED_FOR	247	6.3	4.85	0.78	29.54	31.89	0.93	1.44
DECID_FOR	796	6.3	21.31	3.43	95.21	105.5	3.01	5.24
UNPAVED_RD	1	18.6	5.2	0.84	5.4	7.91	0.37	0.92
TRANSITION	448	18.6	6869.1	1105.93	2417.11	5734.89	166.7	886.65
LO_INT_DEV	260	13.42	45.87	7.38	0.0	9.21	0.0	1.23
HI_INT_DEV	89	32.8	15.83	2.55	0.0	15.2	0.0	1.69
Stream Bank				382.4		573.5		124.5
Groundwater					11781.85	11781.85	579.35	579.35
Point Sources					6	6	0	0
Septic Syst.					5094.12	5094.12	21.3	21.3
Totals	2949	11.4	9131.4	1852.6	22624.2	27602.84	1133.15	2211.14

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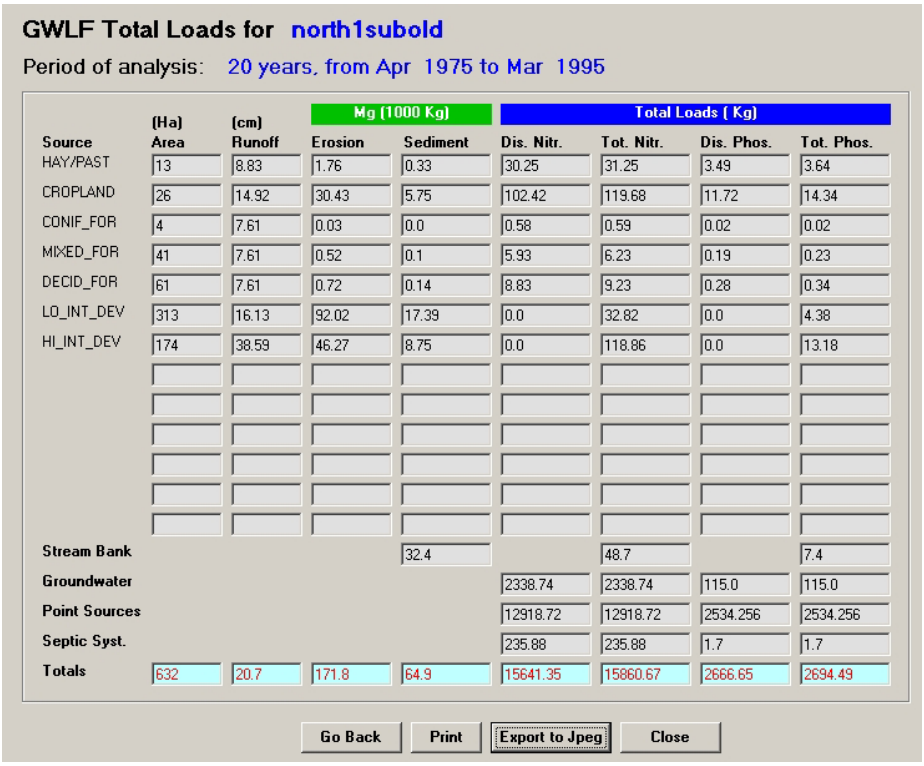
Model Output for Pine Run, Year 2000 Land Use Conditions



GWLF Total Loads for north1subold

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	13	8.83	1.76	0.33	30.25	31.25	3.49	3.64
CROPLAND	26	14.92	30.43	5.75	102.42	119.68	11.72	14.34
CONIF_FOR	4	7.61	0.03	0.0	0.58	0.59	0.02	0.02
MIXED_FOR	41	7.61	0.52	0.1	5.93	6.23	0.19	0.23
DECID_FOR	61	7.61	0.72	0.14	8.83	9.23	0.28	0.34
LO_INT_DEV	313	16.13	92.02	17.39	0.0	32.82	0.0	4.38
HI_INT_DEV	174	38.59	46.27	8.75	0.0	118.86	0.0	13.18
Stream Bank				32.4		48.7		7.4
Groundwater					2338.74	2338.74	115.0	115.0
Point Sources					12918.72	12918.72	2534.256	2534.256
Septic Syst.					235.88	235.88	1.7	1.7
Totals	632	20.7	171.8	64.9	15641.35	15860.67	2666.65	2694.49

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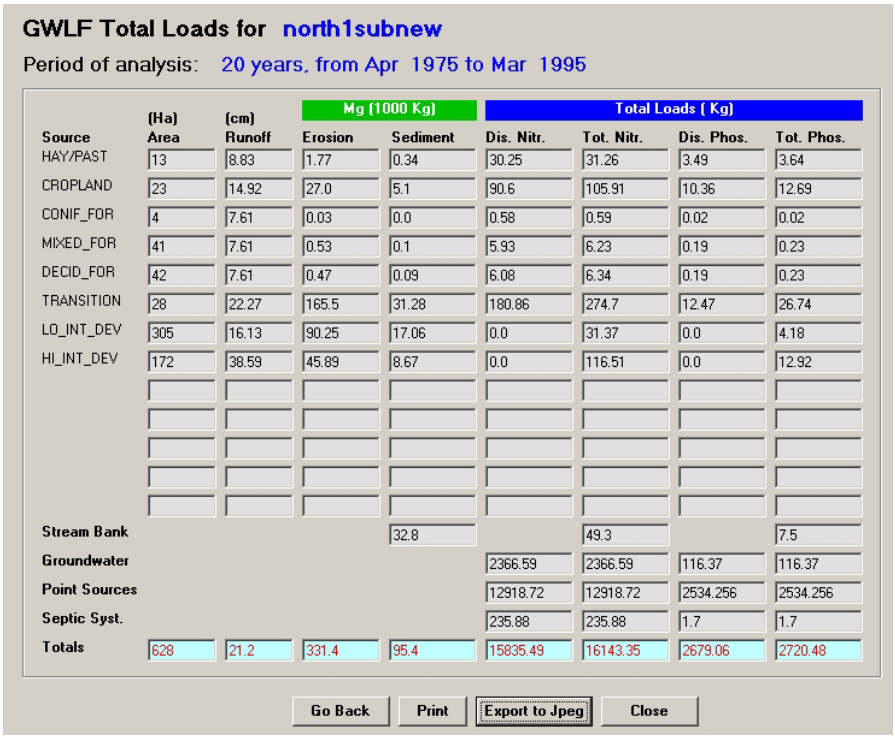
Model Output for Sub-Basin #1 of West Branch Neshaminy, Year 1992 Land Use Conditions



GWLF Total Loads for north1subnew

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	13	8.83	1.77	0.34	30.25	31.26	3.49	3.64
CROPLAND	23	14.92	27.0	5.1	90.6	105.91	10.36	12.69
CONIF_FOR	4	7.61	0.03	0.0	0.58	0.59	0.02	0.02
MIXED_FOR	41	7.61	0.53	0.1	5.93	6.23	0.19	0.23
DECID_FOR	42	7.61	0.47	0.09	6.08	6.34	0.19	0.23
TRANSITION	28	22.27	165.5	31.28	180.86	274.7	12.47	26.74
LO_INT_DEV	305	16.13	90.25	17.06	0.0	31.37	0.0	4.18
HI_INT_DEV	172	38.59	45.89	8.67	0.0	116.51	0.0	12.92
Stream Bank				32.8		49.3		7.5
Groundwater					2366.59	2366.59	116.37	116.37
Point Sources					12918.72	12918.72	2534.256	2534.256
Septic Syst.					235.88	235.88	1.7	1.7
Totals	628	21.2	331.4	95.4	15835.49	16143.35	2679.06	2720.48

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Model Output for Sub-Basin #1 of West Branch Neshaminy, Year 2000 Land Use Conditions

GWLF Total Loads for northsub2old

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	42	7.32	9.66	1.78	81.27	86.61	9.23	10.11
CROPLAND	111	12.41	279.03	51.34	364.55	518.58	41.27	66.94
CONIF_FOR	23	6.3	0.37	0.07	2.75	2.95	0.09	0.12
MIXED_FOR	66	6.3	1.17	0.22	7.89	8.54	0.25	0.36
DECID_FOR	231	6.3	5.51	1.01	27.63	30.67	0.87	1.38
LO_INT_DEV	426	13.42	195.18	35.91	0.0	73.41	0.0	9.79
HI_INT_DEV	122	32.8	35.67	6.56	0.0	53.64	0.0	5.95
Stream Bank				51.9		77.9		13.0
Groundwater					3734.83	3734.83	183.65	183.65
Point Sources					0	0	0	0
Septic Syst.					525.55	525.55	15.33	15.33
Totals	1021	13.1	526.6	148.8	4744.49	5112.66	250.69	306.62

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Model Output for Sub-Basin #2 of West Branch Neshaminy, Year 1992 Land Use Conditions

GWLF Total Loads for northsub2new

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	36	7.32	7.61	1.4	69.66	73.87	7.91	8.61
CROPLAND	46	12.41	87.26	16.06	151.08	199.25	17.1	25.13
CONIF_FOR	22	6.3	0.36	0.07	2.63	2.83	0.08	0.12
MIXED_FOR	66	6.3	1.18	0.22	7.89	8.54	0.25	0.36
DECID_FOR	209	6.3	5.06	0.93	25.0	27.79	0.79	1.26
TRANSITION	71	18.6	1048.1	192.85	383.07	961.62	26.42	122.84
LO_INT_DEV	442	13.42	204.16	37.56	0.0	79.66	0.0	10.62
HI_INT_DEV	124	32.8	38.08	7.01	0.0	58.2	0.0	6.45
Stream Bank				52.9		79.3		13.2
Groundwater					3783.65	3783.65	186.05	186.05
Point Sources					0	0	0	0
Septic Syst.					525.55	525.55	15.33	15.33
Totals	1016	13.8	1391.8	309.0	4948.54	5800.32	253.94	390.0

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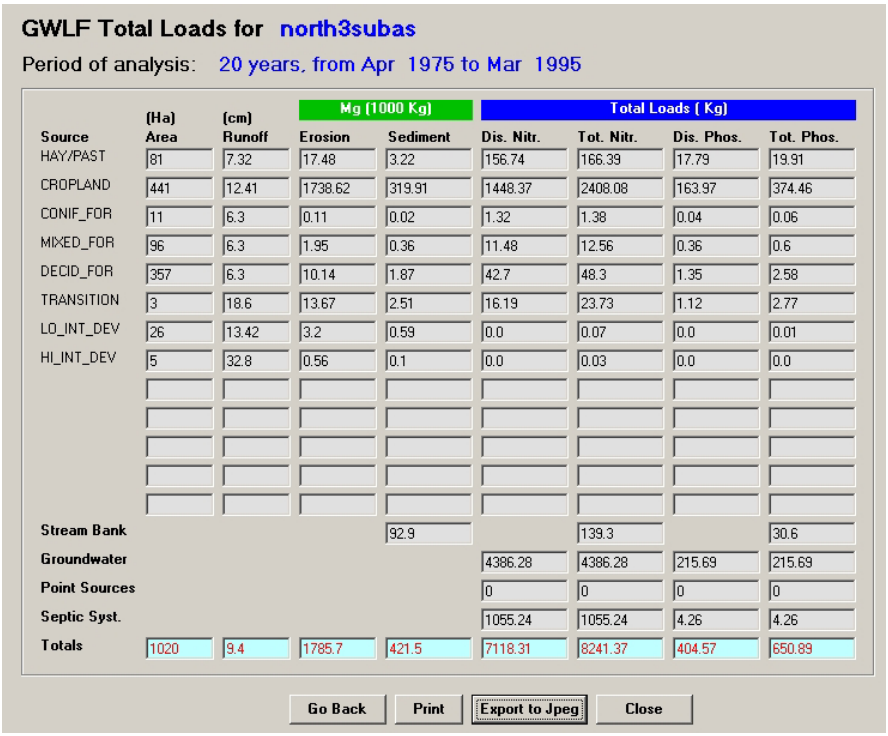
Model Output for Sub-Basin #2 of West Branch Neshaminy, Year 2000 Land Use Conditions



GWLF Total Loads for north3subas

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	81	7.32	17.48	3.22	156.74	166.39	17.79	19.91
CROPLAND	441	12.41	1738.62	319.91	1448.37	2408.08	163.97	374.46
CONIF_FOR	11	6.3	0.11	0.02	1.32	1.38	0.04	0.06
MIXED_FOR	96	6.3	1.95	0.36	11.48	12.56	0.36	0.6
DECID_FOR	357	6.3	10.14	1.87	42.7	48.3	1.35	2.58
TRANSITION	3	18.6	13.67	2.51	16.19	23.73	1.12	2.77
LO_INT_DEV	26	13.42	3.2	0.59	0.0	0.07	0.0	0.01
HI_INT_DEV	5	32.8	0.56	0.1	0.0	0.03	0.0	0.0
Stream Bank				92.9		139.3		30.6
Groundwater					4386.28	4386.28	215.69	215.69
Point Sources					0	0	0	0
Septic Syst.					1055.24	1055.24	4.26	4.26
Totals	1020	9.4	1785.7	421.5	7118.31	8241.37	404.57	650.89

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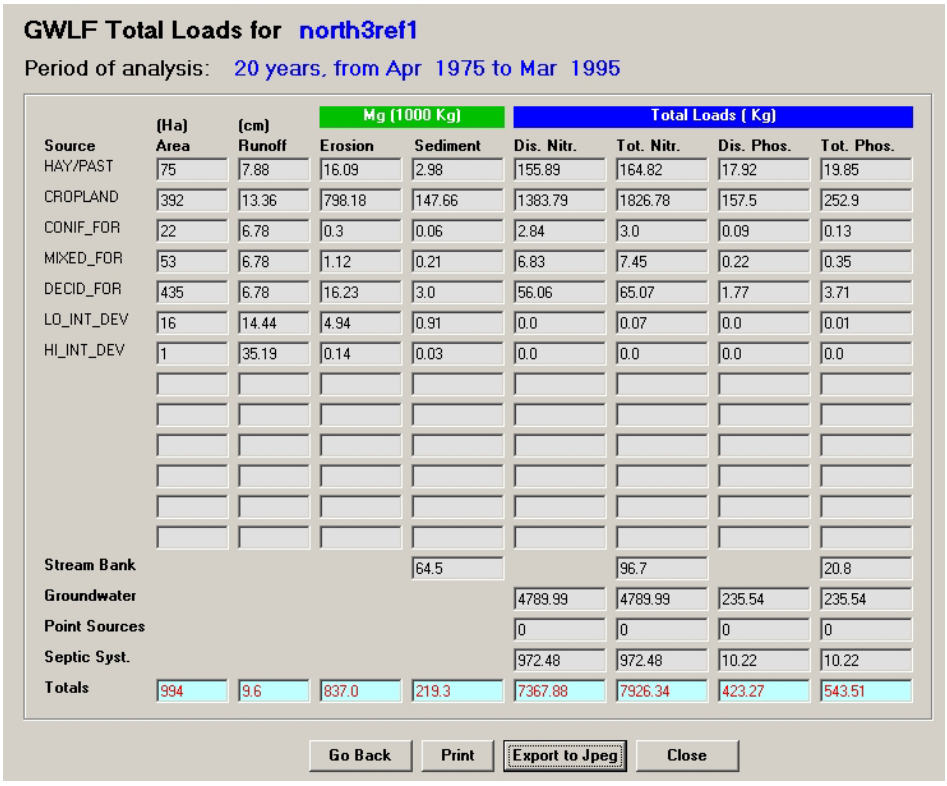
Model Output for Sub-Basin #3 of West Branch Neshaminy



GWLF Total Loads for north3ref1

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	75	7.88	16.09	2.98	155.89	164.82	17.92	19.85
CROPLAND	392	13.36	798.18	147.66	1383.79	1826.78	157.5	252.9
CONIF_FOR	22	6.78	0.3	0.06	2.84	3.0	0.09	0.13
MIXED_FOR	53	6.78	1.12	0.21	6.83	7.45	0.22	0.35
DECID_FOR	435	6.78	16.23	3.0	56.06	65.07	1.77	3.71
LO_INT_DEV	16	14.44	4.94	0.91	0.0	0.07	0.0	0.01
HI_INT_DEV	1	35.19	0.14	0.03	0.0	0.0	0.0	0.0
Stream Bank				64.5		96.7		20.8
Groundwater					4789.99	4789.99	235.54	235.54
Point Sources					0	0	0	0
Septic Syst.					972.48	972.48	10.22	10.22
Totals	994	9.6	837.0	219.3	7367.88	7926.34	423.27	543.51

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Model Output of Reference Watershed for Sub-Basin #3 of West Branch Neshaminy

GWLF Total Loads for wbrnch4

Period of analysis: 10 years, from Apr 1989 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	840.2	2.33	151.26	22.99	1133.09	1271.04	149.79	166.30
CROPLAND	2982.6	4.13	12953.99	1969.01	7096.55	18910.60	945.25	2359.00
CONIF_FOR	489.3	1.98	8.87	1.35	41.80	49.89	1.32	2.29
MIXED_FOR	407.7	1.98	6.94	1.06	34.84	41.17	1.10	1.86
DECID_FOR	911.8	1.98	21.52	3.27	77.91	97.54	2.46	4.81
UNPAVED_RD	2.5	6.34	3.50	0.53	10.30	13.49	0.71	1.09
TRANSITION	457.1	6.34	1551.59	235.84	1906.07	3321.12	131.45	300.79
LO_INT_DEV	2473.5	4.48	222.22	33.78	0.00	299.29	0.00	39.91
HI_INT_DEV	882.2	11.47	54.12	8.23	0.00	382.63	0.00	42.43
Stream Bank				2653.64		265.36		116.76
Groundwater					41376.47	41376.47	787.16	787.16
Point Sources					14001.54	14001.54	1476.56	1476.56
Septic Syst.					6527.79	6527.79	54.51	54.51
Totals	9446.8	4.40	14974.0	4929.6	72206.37	86557.93	3550.30	5353.46

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Model Output for Sub-Basin #4 of West Branch Neshaminy

GWLF Total Loads for Reference

Period of analysis: 10 years, from Apr 1989 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	1104.6	2.33	157.63	23.65	1489.68	1631.55	196.94	220.72
CROPLAND	4297.2	4.13	12808.06	1921.21	10224.45	21751.70	1361.89	3294.62
CONIF_FOR	667.2	1.98	13.95	2.09	57.00	69.56	1.80	3.91
MIXED_FOR	753.7	1.98	22.38	3.36	64.39	84.53	2.03	5.41
DECID_FOR	1848.3	1.98	72.92	10.94	157.92	223.55	4.99	15.99
UNPAVED_RD	2.5	6.34	3.73	0.56	10.30	13.66	0.71	1.27
QUARRY	27.2	7.63	73.93	11.09	0.56	67.10	0.09	11.25
TRANSITION	669.7	6.34	2162.24	324.34	2792.14	4738.15	192.56	518.84
LO_INT_DEV	331.1	4.48	20.72	3.11	0.00	3.69	0.00	0.49
Stream Bank				779.90		77.99		34.32
Groundwater					63625.83	63625.83	540.53	540.53
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					11247.88	11247.88	43.23	43.23
Totals	9701.3	3.40	15335.6	3080.2	89670.17	103535.20	2344.77	4690.58

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Model Output of Reference Watershed for Sub-Basin #4 of West Branch Neshaminy

GWLF Total Loads for neshsouth1old

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	129	6.77	45.36	8.62	227.74	253.6	27.39	33.09
CROPLAND	143	11.69	305.93	58.13	437.68	612.07	51.79	90.27
CONIF_FOR	2	5.8	0.01	0.0	0.22	0.23	0.01	0.01
MIXED_FOR	38	5.8	0.55	0.1	4.19	4.5	0.13	0.2
DECID_FOR	87	5.8	1.77	0.34	9.58	10.59	0.3	0.53
LO_INT_DEV	123	12.67	41.88	7.96	0.0	4.44	0.0	0.59
HI_INT_DEV	17	32.27	2.9	0.55	0.0	0.61	0.0	0.07
Stream Bank				29.8		44.7		9.9
Groundwater					1774.93	1774.93	87.28	87.28
Point Sources					0	0	0	0
Septic Syst.					136.56	136.56	0.0	0.0
Totals	539	10.0	398.4	105.5	2590.91	2842.2	166.89	221.89

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Model Output of Neshaminy Creek Tributary #1 Watershed, Year 1992 Land Use Conditions

GWLF Total Loads for neshsouth1

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	80	6.77	24.63	4.68	141.24	155.28	16.98	20.08
CROPLAND	116	11.69	229.89	43.68	355.04	486.08	42.01	70.92
CONIF_FOR	2	5.8	0.01	0.0	0.22	0.23	0.01	0.01
MIXED_FOR	35	5.8	0.49	0.09	3.86	4.14	0.12	0.18
DECID_FOR	76	5.8	1.56	0.3	8.37	9.26	0.26	0.46
TRANSITION	101	17.82	1251.46	237.78	521.89	1235.22	35.99	193.4
LO_INT_DEV	106	12.67	36.92	7.02	0.0	3.38	0.0	0.45
HI_INT_DEV	17	32.27	2.93	0.56	0.0	0.62	0.0	0.07
Stream Bank				32.6		48.9		10.8
Groundwater					1954.32	1954.32	96.1	96.1
Point Sources					0	0	0	0
Septic Syst.					136.56	136.56	0.0	0.0
Totals	533	11.7	1547.9	326.7	3121.5	4033.99	191.48	392.47

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Model Output of Neshaminy Creek Tributary #1 Watershed, Year 2000 Land Use Conditions

GWLF Total Loads for neshsouth2old

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	5	6.77	0.46	0.09	8.83	9.09	1.06	1.11
CROPLAND	37	11.69	86.95	16.96	113.25	164.12	13.4	22.44
CONIF_FOR	8	2.01	0.21	0.04	0.31	0.43	0.01	0.03
MIXED_FOR	17	5.8	0.36	0.07	1.87	2.08	0.06	0.1
DECID_FOR	52	2.01	2.87	0.56	1.98	3.66	0.06	0.36
LO_INT_DEV	61	9.97	25.06	4.89	0.0	1.15	0.0	0.15
HI_INT_DEV	7	23.57	1.29	0.25	0.0	0.1	0.0	0.01
Stream Bank				5.4		8.1		1.4
Groundwater					717.18	717.18	35.27	35.27
Point Sources					0	0	0	0
Septic Syst.					99.32	99.32	0.0	0.0
Totals	187	7.8	117.2	28.3	942.73	1005.21	49.86	60.9

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Model Output of Neshaminy Creek Tributary #2 Watershed, Year 1992 Land Use Conditions

GWLF Total Loads for neshsouth2

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	3	6.77	0.25	0.05	5.3	5.44	0.64	0.66
CROPLAND	21	11.69	38.55	7.52	64.28	86.83	7.6	11.61
CONIF_FOR	8	2.01	0.21	0.04	0.31	0.43	0.01	0.03
MIXED_FOR	16	5.8	0.34	0.07	1.76	1.96	0.06	0.09
DECID_FOR	49	2.01	2.73	0.53	1.87	3.46	0.06	0.34
TRANSITION	22	17.82	287.75	56.11	113.68	282.01	7.84	37.75
LO_INT_DEV	59	9.97	24.77	4.83	0.0	1.1	0.0	0.15
HI_INT_DEV	7	23.57	1.31	0.25	0.0	0.1	0.0	0.01
Stream Bank				5.6		8.4		1.5
Groundwater					738.99	738.99	36.34	36.34
Point Sources					0	0	0	0
Septic Syst.					99.32	99.32	0.0	0.0
Totals	185	8.7	355.9	75.0	1025.5	1228.05	52.54	88.48

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Model Output of Neshaminy Creek Tributary #2 Watershed, Year 2002 Land Use Conditions

GWLF Total Loads for neshMidsub1

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	73	7.32	19.61	3.69	141.26	152.32	16.03	18.53
CROPLAND	338	12.41	564.83	106.19	1110.09	1428.65	125.67	197.56
CONIF_FOR	3	6.3	0.02	0.0	0.36	0.37	0.01	0.01
MIXED_FOR	51	6.3	0.79	0.15	6.1	6.55	0.19	0.29
DECID_FOR	212	6.3	4.91	0.92	25.36	28.13	0.8	1.43
LO_INT_DEV	54	13.42	10.93	2.05	0.0	0.53	0.0	0.07
HI_INT_DEV	22	32.8	4.03	0.76	0.0	1.12	0.0	0.12
Stream Bank				29.3		43.9		9.9
Groundwater					3137.96	3137.96	154.3	154.3
Point Sources					2727.756	2727.756	636	636
Septic Syst.					612.45	612.45	8.52	8.52
Totals	753	10.4	605.1	143.1	7761.33	8139.76	941.53	1026.75

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Model Output of Neshaminy Creek Tributary #3 Watershed

GWLF Total Loads for nemidref

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	88	7.32	17.26	3.28	170.29	180.13	19.33	21.61
CROPLAND	249	12.41	397.74	75.57	817.78	1044.5	92.58	145.18
CONIF_FOR	13	6.3	0.15	0.03	1.55	1.64	0.05	0.07
MIXED_FOR	64	6.3	1.05	0.2	7.65	8.25	0.24	0.38
DECID_FOR	162	6.3	3.76	0.71	19.38	21.52	0.61	1.11
UNPAVED_RD	1	18.6	3.17	0.6	5.4	7.2	0.37	0.79
HI_INT_DEV	4	32.8	0.46	0.09	0.0	0.02	0.0	0.0
Stream Bank				27.9		41.9		9.7
Groundwater					2299.24	2299.24	113.06	113.06
Point Sources					0	0	0	0
Septic Syst.					537.97	537.97	2.56	2.56
Totals	581	9.3	423.6	108.4	3859.26	4142.32	228.8	294.47

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Model Output of Reference Watershed for Neshaminy Creek Tributary #3 Watershed

GWLF Total Loads for Millcreek

Period of analysis: 10 years, from Apr 1989 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	427.5	2.33	60.72	10.99	576.54	642.49	76.22	81.76
CROPLAND	1445.6	4.13	3940.84	713.29	3439.51	7719.26	458.14	817.64
CONIF_FOR	153.2	1.98	1.74	0.31	13.09	14.97	0.41	0.57
MIXED_FOR	180.4	1.98	1.94	0.35	15.41	17.52	0.49	0.66
DECID_FOR	281.7	1.98	3.42	0.62	24.07	27.78	0.76	1.07
UNPAVED_RD	2.5	6.34	3.42	0.62	10.30	14.02	0.71	1.02
QUARRY	27.2	7.63	27.72	5.02	0.56	30.67	0.09	2.62
TRANSITION	180.4	6.34	414.70	75.06	752.13	1202.49	51.87	89.70
LO_INT_DEV	328.6	4.48	17.19	3.11	0.00	3.66	0.00	0.49
Stream Bank				281.36		28.14		12.38
Groundwater					14411.98	14411.98	200.82	200.82
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					3533.22	3533.22	24.43	24.43
Totals	3027.0	3.60	4471.7	1090.8	22776.81	27646.20	813.95	1233.17

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Model Output for Mill Creek

GWLF Total Loads for Reference

Period of analysis: 10 years, from Apr 1989 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	350.9	2.33	54.16	9.91	473.23	532.70	62.56	74.38
CROPLAND	943.9	4.13	2709.36	495.81	2245.97	5220.85	299.16	890.17
CONIF_FOR	190.3	1.98	3.95	0.72	16.26	20.59	0.51	1.37
MIXED_FOR	202.6	1.98	4.52	0.83	17.31	22.27	0.55	1.53
DECID_FOR	600.5	1.98	16.70	3.06	51.30	69.64	1.62	5.26
TRANSITION	197.7	6.34	847.66	155.12	824.25	1754.98	56.84	241.75
LO_INT_DEV	217.5	4.48	16.23	2.97	0.00	2.31	0.00	0.31
Stream Bank				106.49		10.65		4.69
Groundwater					14566.26	14566.26	184.96	184.96
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					4290.99	4290.99	16.92	16.92
Totals	2703.3	3.30	3652.6	774.9	22485.57	26491.24	623.13	1421.34

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Model Output of Reference Watershed for Mill Creek

GWLF Total Loads for corecreek

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	387	6.77	76.63	12.72	683.23	721.39	82.16	90.9
CROPLAND	978	11.69	3124.03	518.59	2993.39	4549.16	354.17	710.44
CONIF_FOR	12	5.8	0.07	0.01	1.32	1.36	0.04	0.05
MIXED_FOR	177	5.8	1.97	0.33	19.5	20.48	0.62	0.84
DECID_FOR	414	5.8	6.11	1.01	45.61	48.65	1.44	2.14
LO_INT_DEV	334	12.67	65.76	10.92	0.0	16.55	0.0	2.21
HI_INT_DEV	83	32.27	12.29	2.04	0.0	11.11	0.0	1.23
Stream Bank				258.9		388.3		88.9
Groundwater					8271.17	8271.17	406.72	406.72
Point Sources					0	0	0	0
Septic Syst.					1891.16	1891.16	6.82	6.82
Totals	2385	10.3	3286.9	804.5	13905.39	15919.36	851.96	1310.27

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Model Output for Core Creek Watershed

GWLF Total Loads for corerefwat

Period of analysis: 20 years, from Apr 1975 to Mar 1995

Source	(Ha) Area	(cm) Runoff	Mg (1000 Kg) Erosion	Mg (1000 Kg) Sediment	Total Loads (Kg) Dis. Nitr.	Total Loads (Kg) Tot. Nitr.	Total Loads (Kg) Dis. Phos.	Total Loads (Kg) Tot. Phos.
HAY/PAST	188	7.88	48.39	8.23	390.76	415.44	44.93	50.37
CROPLAND	892	13.36	1944.36	330.54	3148.83	4140.46	358.4	577.22
CONIF_FOR	29	6.78	0.3	0.05	3.74	3.89	0.12	0.15
MIXED_FOR	136	6.78	2.73	0.46	17.53	18.92	0.55	0.86
DECID_FOR	833	6.78	28.19	4.79	107.36	121.73	3.39	6.56
UNPAVED_RD	1	19.98	4.69	0.8	5.8	8.18	0.4	0.93
LO_INT_DEV	55	14.44	12.74	2.17	0.0	0.55	0.0	0.07
HI_INT_DEV	8	35.19	0.75	0.13	0.0	0.07	0.0	0.01
Stream Bank				252.6		378.8		83.6
Groundwater					10136.05	10136.05	498.42	498.42
Point Sources					0	0	0	0
Septic Syst.					2106.34	2106.34	22.15	22.15
Totals	2142	9.9	2042.1	599.8	15916.41	17330.46	928.36	1240.34

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Model Output of Reference Watershed for Core Creek Watershed

GWLF Total Loads for Nesh_South1

Period of analysis: 20 years, from Apr 1979 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	61.8	0.85	8.83	1.52	29.90	39.02	4.21	4.85
CROPLAND	219.9	2.26	679.76	116.92	283.03	984.54	39.45	88.56
CONIF_FOR	269.3	0.66	6.05	1.04	7.61	13.85	0.24	0.68
MIXED_FOR	266.9	0.66	8.02	1.38	7.54	15.82	0.24	0.82
DECID_FOR	699.3	0.66	25.02	4.30	19.77	45.59	0.62	2.43
TRANSITION	126.0	4.01	459.85	79.09	331.99	806.55	22.90	56.12
LO_INT_DEV	2354.9	3.39	448.32	77.11	0.00	512.35	0.00	68.31
HI_INT_DEV	721.5	8.40	55.16	9.49	0.00	292.37	0.00	32.42
Stream Bank				1245.83		124.58		54.82
Groundwater					8809.64	8809.64	239.40	239.40
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					3304.02	3304.02	5.64	5.64
Totals	4719.7	3.40	1691.0	1536.7	12793.51	14948.34	312.70	554.04

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Model Output of Neshaminy Creek South #1 Watershed

GWLF Total Loads for Reference

Period of analysis: 20 years, from Apr 1979 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	101.3	0.85	14.88	2.53	49.04	64.22	6.91	7.97
CROPLAND	336.1	2.26	867.74	147.51	432.49	1317.58	60.29	122.25
CONIF_FOR	380.5	0.66	10.66	1.81	10.76	21.64	0.34	1.10
MIXED_FOR	264.4	0.66	6.11	1.04	7.47	13.70	0.24	0.67
DECID_FOR	753.7	0.66	22.28	3.79	21.31	44.03	0.67	2.26
UNPAVED_RD	2.5	4.01	5.65	0.96	6.51	12.28	0.45	0.85
TRANSITION	126.0	4.01	494.92	84.14	331.99	836.80	22.90	58.23
LO_INT_DEV	3076.5	4.37	650.69	110.62	0.00	1140.00	0.00	152.00
HI_INT_DEV	266.9	8.40	23.95	4.07	0.00	46.40	0.00	5.15
Stream Bank				989.83		98.98		43.55
Groundwater					19373.63	19373.63	312.62	312.62
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					3705.61	3705.61	5.64	5.64
Totals	5307.8	3.40	2096.9	1346.3	23938.82	26674.89	410.05	712.29

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Model Output of Reference Watershed for Neshaminy Creek South #1 Watershed

GWLF Total Loads for Nesh_South3

Period of analysis: 20 years, from Apr 1979 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	59.3	2.26	2.64	0.48	76.32	79.21	10.64	10.84
CROPLAND	158.1	4.01	121.79	22.16	362.74	495.73	49.81	59.12
CONIF_FOR	121.1	1.92	1.15	0.21	10.02	11.28	0.32	0.40
MIXED_FOR	123.6	1.92	0.85	0.15	10.23	11.15	0.32	0.39
DECID_FOR	321.2	1.92	2.77	0.50	26.59	29.62	0.84	1.05
TRANSITION	56.8	6.25	50.90	9.26	233.61	289.19	16.11	20.00
LO_INT_DEV	1643.2	4.37	93.71	17.06	0.00	93.89	0.00	12.52
HI_INT_DEV	353.4	13.25	6.30	1.15	0.00	21.94	0.00	2.43
Stream Bank				656.18		65.62		28.87
Groundwater					11991.72	11991.72	171.70	171.70
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					1213.91	1213.91	26.31	26.31
Totals	2836.8	5.00	280.1	707.2	13925.15	14303.26	276.05	333.64

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Model Output of Neshaminy Creek South #3 Watershed

GWLF Total Loads for Reference

Period of analysis: 20 years, from Apr 1979 to Mar 1999

Source	(Acres) Area	(in) Runoff	(Tons) Erosion	(Tons) Sediment	Total Loads (Pounds) Dis. Nitr.	Tot. Nitr.	Dis. Phos.	Tot. Phos.
HAY/PAST	51.9	2.26	9.57	1.76	66.78	77.34	9.31	10.05
CROPLAND	153.2	4.01	289.75	53.31	351.40	671.28	48.26	70.65
CONIF_FOR	103.8	1.92	1.44	0.26	8.59	10.18	0.27	0.38
MIXED_FOR	84.0	1.92	1.83	0.34	6.96	8.98	0.22	0.36
DECID_FOR	328.6	1.92	6.46	1.19	27.21	34.34	0.86	1.36
TRANSITION	64.2	6.25	198.17	36.46	264.08	482.86	18.21	33.53
LO_INT_DEV	1697.6	4.37	367.20	67.56	0.00	384.23	0.00	51.23
HI_INT_DEV	69.2	11.71	3.23	0.59	0.00	2.10	0.00	0.23
Stream Bank				288.34		28.83		12.69
Groundwater					9732.93	9732.93	147.80	147.80
Point Sources					0.00	0.00	0.00	0.00
Septic Syst.					1989.71	1989.71	3.76	3.76
Totals	2552.6	4.10	877.6	449.8	12447.67	13422.78	228.69	332.03

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Model Output of Reference Watershed for Neshaminy Creek South #3 Watershed

APPENDIX G. EMPR Results for Selected Watersheds

EMPR Worksheet for Phosphorus Allocation (West Branch Sub-basin#3)

Step 1:	TMDL Total Load				Step 2:	Adjusted LA = (TMDL total load - MOS) - uncontrollabl		
	Load = TP loading rate in ref. * Acres in Impaired					632		
	1,233							
Step 3:		Annual Average Load	Load Sum	Check	Initial Adjust	Recheck	% reduction allocation	Load Reduction
	Hay/Past.	44	939	good	44	ADJUST	0.06	7
	Cropland	827	bad	bad	632	112	0.85	95
	Land dev	68		good	68		0.09	10
					744		1	
Step 4:	All Ag. Loading Rat	0.45						
Step 5:		Acres	Allowable (Target) Loading Rate	Final LA	Current Loading Rates	Current Load	% Red.	
	Final Hay/Past. LA	200	0.19	37	0.22	44	15%	
	Final Cropland LA	1,089	0.49	537	0.76	827	35%	
		187	0.31	58	0.36	68	15%	
				632		939		

EMPR Worksheet for sediment Allocation, Core Creek Watershed

Step 1:	TMDL Total Load				Step 2:	Adjusted LA = (TMDL total load - MOS) - uncontrollabl		
	Load = TP loading rate in ref. * Acres in Impaired					724,139	724,139	
	2,001,827							
Step 3:		Annual Average Load	Load Sum	Check	Initial Adjust	Recheck	% reduction allocation	Load Reduction
	Hay/Past.	28,079	1,172,869	good	28,079	ADJUST	0.04	1,048
	Cropland	1,144,790		bad	724,139	28,079	0.96	27,031
		1,172,869			752,218		1	
Step 4:	All Ag. Loading Rat	214.81						
Step 5:		Acres	Allowable (Target) Loading Rate	Final LA	Current Loading Rates	Current Load	% Red.	
	Final Hay/Past. LA	956	28.27	27,031	29.37	28,079	4%	
	Final Cropland LA	2,415	288.66	697,108	474.03	1,144,790	39%	
		3,371		724,139	347.93	1,172,869	38%	