

Section 10 – Sediment Loading into Martins Pond

In order to ascertain the loading of sediment into Martins Pond, TSS data were combined with flow modeling data to calculate monthly and annual sediment loads into Martins Pond from the Skug River inlet. Those results are presented in Table 37.

Table 37. TSS loading into Martins Pond and flux of TSS out of Martins Pond during the 2005-06 study.

Month	Inlet	Outlet	Percent of Total Load	Outlet minus Inlet kg	%TSS Flux Difference *
	Loading of TSS - kg				
03/05	706.9	3290.1	1.8	2583.2	78.5
04/05	6669.0	1285.1	17.1	-5383.9	- 419.0
05/05	4593.1	564.7	11.8	-4028.4	- 713.4
06/05	3347.5	5203.4	8.6	1855.9	35.7
07/05	2768.0	7483.7	7.1	4715.7	63.0
08/05	1073.9	4770.6	2.8	3696.7	77.5
09/05	4317.1	1414.0	11.1	-2903.1	- 205.3
10/05	7807.5	7030.8	20.0	-776.7	- 11.0
11/05	1021.0	1737.0	2.6	716.0	41.2
12/05	1714.7	192.0	4.4	-1522.7	- 792.9
1/06	1553.8	2188.5	4.0	634.7	29.0
2/06	3416.5	7606.2	8.7	4189.7	55.1
Yearly Sum	38989	42766	100	3777	8.8

* Positive values reflect that outflows > inflows; negative values reflect that inflows > outflows.

Based on the total outflow of TSS from Martins Pond (42,766 kg), the watershed inputs of TSS (38,989 kg) represent 91.2% of the sediment load for Martins Pond. The remaining 8.8% of TSS is the result of stormwater runoff, shoreline erosion and/or resuspension of bottom sediments in Martins Pond. Not surprisingly, the months that contributed the most loading of TSS (April 17.8% and October 20.05) correspond to high flows in spring and fall. Given that TSS is an important component of turbidity in Martins Pond and surface waters throughout the watershed, management efforts should focus on reducing watershed inputs of TSS. As noted earlier (Section 5.1 and 5.2), TSS in Martins Pond during the 2005-06 consisted of 78.9% organic material and 21.1% inorganic materials. Thus, both organic and inorganic sources, particularly watershed sources, should be the focus of an efforts to improve turbidity in Martins Pond by reducing TSS levels.