Appendix 3A-5: Water Year 2013 and Five-Year (Water Year 2009-2013) Annual Flows and Total Phosphorus Loads and Concentrations by Structure and Area

Shi Kui Xue

Contributors: Douglas Pescatore, Jonathan Madden, Christopher King and Stuart Van Horn

This appendix provides annual flows, total phosphorus (TP) loads, and flow-weighted mean (FWM) TP concentrations by structure and area for Water Year 2013 (WY2013) (May 1, 2012–April 30, 2013) and WY2009-WY2013 (five-year period). **Tables 1** through **5** present this information for the Stormwater Treatment Area (STA) 1 inflow basin and L-8/C-51 Basin/Rustic Ranch; Water Conservation Areas 1, 2, and 3 (WCA-1, WCA-2, and WCA-3); and Everglades National Park (ENP), respectively. Note that the same color font within a table indicates the same source level.

For WY2013, total flows, TP loads, and TP FWM concentrations into the Everglades Protection Area (EPA) are calculated from the total inflows to WCA-1, WCA-2, WCA-3, and ENP, minus that transferred within the EPA through numerous structures: S-10A, S-10C, S-10D, S-11A, S-11B, S-11C, S-12A, S-12B, S-12C, S-12D, S-333–S-334, and S-355A/S-355B. The totals into the EPA are as follows:

- Flow: 1,945.240 acre-feet (ac-ft) in thousands
- TP load: 60,525 kilograms (kg)
- TP FWM concentration: 25 micrograms per liter (µg/L)

For WY2013, total flows, TP loads, and TP FWM concentrations from the EPA for water supply and flood control are calculated from the totals of WCA-1, WCA-2, and WCA-3 from structures S-39, G-300 (negative flow), G-301 (negative flow), G-94A, G-94B, G-94C, G-94D, S-7 (negative flow), S-38, S-34, S-150 (negative flow), S-8 (negative flow), S-31, S-337, S-343A, S-343B, S-344, S-197, and S-334. In addition, the majority of flow exiting the EPA south from ENP is not monitored. The monitored totals from the EPA are as follows:

- Flow: 422.778 ac-ft in thousands
- TP load: 9,482 kg
- TP FWM concentration: 18 µg/L

This appendix provides five-year average annual flows, TP loads, and FWM TP concentrations by area for WY2009 through WY2013. **Tables 6** through **8** present flows, TP loads, and FWM TP concentrations to STAs and diversion from inflow tributaries. **Tables 9** through **11** present flows, TP loads, and FWM TP concentrations for the EPA. Details used to calculate values for each of the five years are presented in this appendix and the 2010-2013 SFERs-Volume I, Appendix 3A-5.

Table 1. WY2013 annual flows, TP loads, and FWM TP concentrations for the STA–1 inflow basin and L-8/C-51 Basin/Rustic Ranch.

Into STA-1 Inflow Basin

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-5A_P	208.561	64244	250
S-5A from EAA	175.538	49409	228
S-5A from East Beach	14.308	10890	617
S-5A from Lake O	10.088	2226	179
S-5AW from Lake O	7.160	941	107
S-5AW from L-8 Basin	2.473	937	307
S-5AS	0.000	0	NA
S-5AS from Lake O	0.000	0	NA
S-5AS from L-8 Basin	0.000	0	NA
G-300	45.648	2348	42
G-300 from WCA-1	45.648	2348	42
G-301	0.037	8	167
G-301 from WCA-1	0.037	8	167
G-311	6.634	2350	287
G-311 from C-51	6.634	2350	287
Total	**260.880**	**68950**	**214**

From L-8/C-51 Basin/Rust Ranch

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-319	119.790	32576	220
from Lake O	9.411	1486	128
from L-8 Basin	34.395	8258	195
from C-51W and Wellington	75.984	22832	244
S-361 (Rust Ranch)	4.360	341	63
Total	**124.150**	**32916**	**215**

From STA-1 Inflow Basin

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-5AS	58.710	2647	37
from EAA	7.963	500	51
from East Beach	0.945	342	293
from Lake O	1.398	242	140
from L-8 Basin	0.011	1	74
from WCA-1	38.049	1928	41
from G-311 (C-51)	0.359	61	138
G-300	21.850	9999	371
from EAA	18.313	9477	420
from East Beach	1.225	1390	920
from Lake O	0.000	0	NA
from L-8 Basin	0.357	203	461
from G-311 (C-51)	1.526	556	295
G-301	6.026	3129	421
from EAA	5.035	2367	381
from East Beach	0.377	413	888
from Lake O	0.000	0	NA
from L-8 Basin	0.005	3	486
From G-311 (C-51)	0.783	286	296
G-302	166.113	50125	245
from EAA	129.915	34450	215
from East Beach	10.267	7951	628
from Lake O	10.621	2201	168
from L-8 Basin	1.855	189	83
from WCA-1	7.232	403	45
from G-311 (C-51)	3.965	1437	294
G-311	17.305	3836	180
from EAA	12.883	2504	158
from East Beach	1.440	789	444
from Lake O	2.848	600	171
from L-8 Basin	0.188	42	181
from G-311 (C-51)	0.069	23	275
Total	**270.003**	**69736**	**209**

Table 2. WY2013 annual flows, TP loads, and FWM TP concentrations for WCA-1 (Refuge).

Into WCA-1

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
G-300 & G-301	27.876	13128	382
G338	0	0	NA
S-362 (from STA-1E)	141.185	4487	26
G-251 (from STA-1W)	0.013	0	21
G-310 (from STA-1W)	194.817	8545	36
ACME2	1.231	211	139
Total	**365.120**	**26372**	**59**

From WCA-1

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-10A	75.868	1238	13
S-10C	95.304	2034	17
S-10D	188.331	7960	34
S-39	73.946	2492	27
G-300	45.648	2348	42
G-301	0.037	8	167
G-94A	0.000	0	NA
G-94B	0.008	0	46
G-94C	4.561	106	19
G-338	0.003	0	43
G-94D	0.000	0	NA
Total	**483.706**	**16168**	**27**

Table 3. WY2013 annual flows, TP loads, and FWM TP concentrations for WCA-2.

Into WCA-2[1]

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
G-335 and G-436 (from STA-2)	327.430	9,059	22
STA-2 from EAA	286.811	37481	106
from East Shore	18.937	3374	144
from Lake O	15.311	1232	65
STA-2 Retained		-33037	
S-7	382.092	5763	12
from STA-3/4	307.154	5449	14 [1]
from Lake O	9.413	821	71
from EAA	166.225	22591	110
STA ¾ Retained		-32676	
from G-371	0.007	<1	46
from Lake O	0	0	NA
from EAA	0.007	<1	46
S-10A (from WCA-1)	75.868	1238	13
S-10C (from WCA-1)	95.304	2034	17
S-10D (from WCA-1)	188.331	7960	34
N. Springs Improv. District	0.000	0	NA
Total	**1069.024**	**26053**	**20**

From WCA-2

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-7	0.000	0	NA
S-11A (from WCA-2)	390.530	4277	9
S-11B (from WCA-2)	244.643	2546	8
S-11C (from WCA-2)	144.405	1836	10
S-38	153.778	1684	9
S-34	4.386	57	10
Total	**937.742**	**10399**	**9**

[1] Orange shaded cells indicate the values are proportionally calculated based on summation of EAA model outputs of the S-7 and S-8 basins.

Table 4. WY2013 annual flows, TP loads, and TP FWM concentrations for WCA-3.

Into WCA-3[1]

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
Non-ECP-L-28, Feeder Canal	98.465	7494	62
S-140 (from L-28 Canal)	73.311	4478	50
S-190 (from Feeder Canal)	25.154	3016	97
G-407	0.047	4	61
STA-5/6 South	1.531	109	58
S-8	156.125	2848	15
from STA-3/4	125.505	2226	14
from Lake O	35.810	3678	83
from EAA	152.005	20544	110
from C-139	10.591	697	53
from SFCD	17.022	2028	97
from SSDD	7.117	1359	155
STA 3/4 Retained		-13352	
from G-373	0.151	10	53
from Lake O	0.070	4	50
from EAA	0.030	1	27
from C-139	0.026	2	60
from SFCD	0.021	2	88
from SSDD	0.004	0	76
STA-5/6 outflow North	32.198	619	16
From C139	46.056	7441	131
S-150	40.365	939	19
from STA-3/4	32.449	576	14
from Lake O	0.994	87	71
from EAA	17.561	2387	110
STA 3/4 Retained		-3452	
from G-371	0.020	1	30
from Lake O	0.012	1	43
from EAA	0.008	<1	10
G-404 & G-357	44.220	802	15
from STA-3/4	35.547	631	14
from Lake O to G-409	10.143	1042	83
from EAA	43.053	5819	110
from C-139	3.000	197	53
from SFCD	4.821	574	97
from SSDD	2.016	385	155
STA 3/4 Retained		-3782	
from G-373	0.043	3	53
from Lake O	0.020	1	50
from EAA	0.008	<1	27
from C-139	0.007	1	60
from SFCD	0.006	1	88
from SSDD	0.001	<1	76
STA-5/6 outflow North	9.119	175	16
From C139	13.044	2107	131
S-11A (from WCA-2)	390.530	4277	9
S-11B (from WCA-2)	244.643	2546	8
S-11C (from WCA-2)	144.405	1836	10
G-123 (from N. New River)	0.000	0	NA
Non-ECP-C-11 West	247.483	4311	14
S-9 (from C-11 West)	166.720	3252	16
S-9A (from C-11 West)	80.763	1059	11
Total	**1367.811**	**25166**	**15**

From WCA-3

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-150	1.288	20	13
S-8	0.000	0	NA
S-31	0.000	0	NA
S-337	0.002	0	9
S-343A	16.150	131	7
S-343B	21.150	177	7
S-344	0.000	0	NA
S-12A	69.306	656	8
S-12B	116.138	789	6
S-12C	222.307	1685	6
S-12D	334.110	3632	9
S-333[2]	152.438	2455	13
S-355A/S-355B	0.000	0	NA
G357	0.001	0	21
G-409	10.025	1166	94
Total	**942.934**	**10711**	**9**

[1] Orange shaded cells indicate the values are proportionally calculated based on summation of EAA model outputs of the S-7 and S-8 basins.

[2] Value includes S-334 from WCA-3.

Table 5. WY2013 annual flows, TP loads, and TP FWM concentrations for ENP.

Into ENP

Structure	Flow (1,000 ac-ft)	TP	
		Load (kg)	FWMC (µg/L)
S-12A (from WCA-3)	69.306	656	8
S-12B (from WCA-3)	116.138	789	6
S-12C (from WCA-3)	222.307	1685	6
S-12D (from WCA-3)	334.110	3632	9
S-333-S-334 (from WCA-3)[3]	71.964	1225	14
S-355A/S-355B (from WCA-3)	0.000	0	NA
Non-ECP-C111 Basin	282.363	2825	8
S-332D	133.137	1039	6
S-18C	149.225	1786	10
Total	**1096.189**	**10813**	**8**

From ENP

Structure	Flow (1,000 ac-t)	TP	
		Load (kg)	FWMC (µg/L)
S-197	11.303	63	5
Total	**11.303**	**63**	**5**

[3] FWM TP concentration is calculated using net flow (S333-S334) and S333 TP data.

Structures/Locations:

C-139 – C-139 Basin
EAA – Everglades Agricultural Area
East Beach – East Beach Water Control District
East Shore – East Shore Drainage District
ENP – Everglades National Park
Lake O – Lake Okeechobee
Non-ECP-Non Everglades Construction Project
N. New River – North New River
N. Springs Improv. District – North Springs Improvement District
SFCD – South Florida Conservancy District
SSDD – South Shore Drainage District
STA-1E – Stormwater Treatment Area 1 East
STA-1W – Stormwater Treatment Area 1 West
STA-2 – Stormwater Treatment Area 2
STA-3/4 – Stormwater Treatment Area 3/4
STA-5/6 – Stormwater Treatment Area 5/6
WCA-1 – Water Conservation Area 1
WCA-2 – Water Conservation Area 2
WCA-3 – Water Conservation Area 3

Units of Measurement:

ac-ft – acre-feet
kg – kilograms
µg/L – micrograms per liter

Other Abbreviations:

FWMC – flow-weighted mean concentration
NA – not applicable

Table 6. Flow volume budgets to the Everglades STAs and diversion from inflow tributaries (Kac-ft/yr).

Source Apportioned STA Inflows & Diversions							
	WY2009	WY2010	WY2011	WY2012	WY2013	**Five-Year Average**	Five-Year % STAs/Div
Lake Okeechobee							
Lake through EAA to STAs and Diversions	82.5	19.6	47.7	95.6	81.8	65.4	6%
Lake through L-8 to STAs and Diversions	7.2	3.9	12.2	0.5	16.6	8.1	1%
Total Lake Okeechobee to STAs and Diversions	89.7	23.5	59.9	96.1	98.4	73.5	7%
C-139 Basin							
from C-139 to EAA STAs and Diversions	16.5	23.7	19.4	17.8	13.6	18.2	2%
from C-139 to STA-5/6 and Diversions	148.8	174.7	86.9	60.4	59.1	106.0	10%
Total C-139 Basin to STAs and Diversions	165.4	198.5	106.3	78.2	72.7	124.2	11%
Everglades Agricultural Area (EAA) Basin							
Flow from Lake to EAA	467.2	145.1	457.7	447.7	249.3	353.4	n/a
from EAA to STAs and Diversions	838.4	1062.0	516.6	544.9	841.2	760.7	70%
Water Control District (WCD) Basins through EAA							
East Beach WCD Diversion Basin to STAs and Diversions	12.1	16.1	8.7	4.7	14.3	11.2	1%
ESWCD & Closter Farms Diversion Basins to STAs and Diversions	16.7	35.3	18.3	14.6	18.9	20.8	2%
SFCD/SSDD Diversion Basins to STAs and Diversions	23.9	36.2	25.1	23.3	31.0	27.9	3%
Total Other WCDs to STAs and Diversions	52.7	87.6	52.1	42.7	64.3	59.9	6%
L-8/C-51W/Rustic Ranch Basins							
L-8 to STAs and Diversions	19.6	0.6	6.9	0.3	34.4	12.4	1%
C-51W to STAs and Diversions	58.0	28.9	10.2	58.3	85.1	48.1	4%
Rustic Ranch to STAs	11.0	8.8	6.3	6.1	4.4	7.3	1%
Total from L-8/C-51W/Rustic Ranch to STAs and Diversions	88.6	38.3	23.5	64.7	123.8	67.8	6%
Apportioned Total to STA Inflows and Diversions	1234.8	1409.8	758.5	826.7	1200.5	1086.1	100%
STA Reported Data							
STA and Diversions Budget							
Total STAs Inflow	1161.6	1467.8	736.3	712.3	1160.9	1047.8	97%
Total Diversions	48.4	9.7	12.4	86.2	28.0	36.9	3%
Total STAs Inflows and Diversions	1210.0	1477.5	748.7	798.6	1189.0	1084.7	100%
Total STAs Outflow	1235.6	1512.3	723.5	730.5	1206.9	1081.8	
Total STAs Outflows and Diversions	1284.0	1522.0	736.0	816.7	1235.0	1118.7	
STA Inflows & Diversions Mass Balance Check							
% Difference between Historic & Source Apportioned	-2.05%	4.58%	-1.30%	-3.52%	-0.97%	-0.12%	

Note: The actual values are the basis for the apportionment to the sources. However, mass balancing the system results in slight differences due to multiple complexities in tracking all discharges. EAA to STAs and Diversions is a portion of the total EAA runoff reported in SFER Chapter 4.

Table 7. TP load budgets to the Everglades STAs and diversions from inflow tributaries (mt/yr).

Source Apportioned STA Inflows & Diversions							
	WY2009	WY2010	WY2011	WY2012	WY2013	**Five-Year Average**	Five-Year % STAs/Div
Lake Okeechobee							
Lake through EAA to STAs and Diversions	15.0	2.9	8.8	12.5	9.1	9.6	6%
Lake through L-8 to STAs and Diversions	1.1	0.9	1.7	0.1	2.4	1.2	1%
Total Lake Okeechobee to STAs and Diversions	16.0	3.8	10.5	12.6	11.5	10.9	6%
C-139 Basin							
from C-139 to EAA STAs and Diversions	5.3	4.0	1.6	3.2	0.9	3.0	2%
from C-139 to STA5/6 and Diversions	46.8	37.8	18.6	12.1	9.5	25.0	14%
Total C-139 Basin to STAs and Diversions	52.1	41.8	20.3	15.3	10.4	28.0	16%
Everglades Agricultural Area Basin							
Flow from Lake to EAA	77.8	17.4	61.0	55.1	28.1	47.9	n/a
from EAA to STAs and Diversions	121.3	165.4	45.3	62.7	138.2	106.6	61%
Water Control District (WCD) Basins through EAA							
East Beach WCD Diversion Basin to STAs and Diversions	10.2	16.3	4.7	2.3	10.9	8.9	5%
ESWCD & Closter Farms Diversion Basins to STAs and Diversions	2.6	6.3	2.7	2.1	3.4	3.4	2%
SFCD/SSDD Diversion Basins to STAs and Diversions	3.4	4.8	3.3	3.2	4.4	3.8	2%
Total Other WCDs to STAs and Diversions	16.1	27.4	10.8	7.7	18.6	16.1	9%
L-8/C-51W/Rustic Ranch Basins							
L-8 to STAs and Diversions	4.1	0.2	1.0	0.0	8.3	2.7	2%
C-51W to STAs and Diversions	9.3	9.4	1.3	6.7	26.1	10.6	6%
Rustic Ranch to STAs	0.4	0.4	0.1	0.1	0.3	0.3	0%
Total from L-8/C-51W/Rustic Ranch to STAs and Diversions	13.9	10.1	2.4	6.9	34.7	13.6	8%
Apportioned Total to STA Inflows and Diversions	219.5	248.4	89.3	105.1	213.5	175.2	100%
STA Reported Data							
STA and Diversions Budget							
Total STAs Inflow	217.9	262.0	85.9	97.8	198.3	172.4	97%
Total Diversions	4.3	0.6	0.5	7.5	13.1	5.2	3%
Total STAs inflows and Diversions	222.1	262.6	86.4	105.3	211.4	177.6	100%
Total STAs Outflow	38.2	61.1	17.8	17.0	31.9	33.2	
Total STAs Outflows and Diversions	42.4	61.7	18.2	24.5	45.0	38.4	
STA Inflows & Diversions Mass Balance Check							
% Difference between Historic & Source Apportioned	1.20%	5.42%	-3.36%	0.13%	-1.00%	1.35%	

Note: The actual values are the basis for the apportionment to the sources. However, mass balancing the system results in slight differences due to multiple complexities in tracking all discharges. EAA to STAs and Diversions is a portion of the total EAA runoff reported in SFER Chapter 4.

Table 8. TP FWMC to the Everglades STAs and diversion from inflow tributaries (ppb or µg/L).

Source Apportioned STA Inflows & Diversions						
	WY2009	WY2010	WY2011	WY2012	WY2013	Five-Year Average
Lake Okeechobee						
Lake through EAA to STAs and Diversions	147	120	149	106	90	119
Lake through L-8 to STAs and Diversions	121	183	115	168	119	125
Total Lake Okeechobee to STAs and Diversions	145	130	142	106	95	120
C-139 Basin						
from C-139 to EAA STAs and Diversions	260	138	67	146	53	134
from C-139 to STA5/6 and Diversions	255	175	174	162	131	191
Total C-139 Basin to STAs and Diversions	255	171	154	159	116	183
Everglades Agricultural Area Basin						
Flow from Lake to EAA	135	97	108	100	91	110
from EAA to STAs and Diversions	117	126	71	93	133	114
Water Control District (WCD) Basins through EAA						
East Beach WCD Diversion Basin to STAs and Diversions	679	823	444	401	617	645
ESWCD & Closter Farms Diversion Basins to STAs and Diversions	126	143	121	115	144	133
SFCD/SSDD Diversion Basins to STAs and Diversions	114	108	106	113	114	111
Total Other WCDs to STAs and Diversions	248	254	167	146	235	218
L-8/C-51W/Rustic Ranch Basins						
L-8 to STAs and Diversions	171	229	118	122	195	178
C-51W to STAs and Diversions	131	265	106	94	249	179
Rustic Ranch to STAs	32	40	13	12	63	31
Total from L-8/C-51W/Rustic Ranch to STAs and Diversions	127	213	84	86	227	163
Apportioned Total to STA Inflows and Diversions	144	143	95	103	144	131
STA Reported Data						
STA and Diversions Budget						
Total STAs Inflow	152	145	95	111	138	133
Total Diversions	72	50	31	70	380	114
Total STAs inflows and Diversions	149	144	94	107	144	133
Total STAs Outflow	25	33	20	19	21	25
Total STAs Outflows and Diversions	27	33	20	24	30	28
STA Inflows & Diversions Mass Balance Check						
% difference between Historic & Source Apportioned	3.19%	0.88%	-2.03%	3.53%	-0.04%	1.47%

Note: The actual values are the basis for the apportionment to the sources. However, mass balancing the system results in slight differences due to multiple complexities in tracking all discharges. EAA to STAs and Diversions is a portion of the total EAA runoff reported in Chapter 4 of this volume.

Table 9. Flow budgets for the EPA and inflow tributaries (Kac-ft/yr).

	WY2009	WY2010	WY2011	WY2012	WY2013	Five-Year Average
Discharges within EPA						
Water Conservation Area 1 (WCA-1 or Refuge)						
Into WCA1[1]	335.7	310.2	152.6	170.2	365.1	266.8
From STA+Diversion	*335.7*	*310.2*	*152.6*	*170.2*	*363.9*	*266.5*
From Eastern Non-ECP	*0.0*	*0.0*	*0.0*	*0.0*	*1.2*	*0.2*
from WCA1 total	333.9	487.8	217.4	16.3	483.7	307.8
From WCA1 to WCA2	*254.3*	*456.4*	*133.6*	*0.0*	*359.5*	*240.8*
Discharge from WCA1 out of EPA	*79.6*	*31.4*	*83.8*	*16.3*	*124.2*	*67.0*
Net to WCA1	1.8	-177.6	-64.8	154.0	-118.6	-41.0
Water Conservation Area 2 (WCA-2)						
Into WCA2	905.9	1265.8	466.6	386.1	1069.0	818.7
From STA+Diversion	*557.6*	*711.6*	*294.4*	*339.2*	*634.6*	*507.5*
From Eastern Non-ECP	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
From WCA1 to WCA2	*254.3*	*456.4*	*133.6*	*0.0*	*359.5*	*240.8*
from WCA2 total	733.0	806.6	407.2	378.0	937.7	652.5
From WCA2 to WCA3	*623.9*	*649.5*	*254.3*	*297.2*	*779.6*	*520.9*
Discharge from WCA2 out of EPA	*109.1*	*157.1*	*152.8*	*80.9*	*158.2*	*131.6*
Net to WCA2	172.9	459.2	59.5	8.1	131.3	166.2
Water Conservation Area 3 (WCA-3)						
Into WCA3	1357.0	1509.6	834.1	959.7	1367.8	1205.6
From STA+Diversion	*391.4*	*478.1*	*288.9*	*306.8*	*236.4*	*340.3*
From Eastern Non-ECP	*143.2*	*175.3*	*148.2*	*191.1*	*247.5*	*181.1*
From Western Non-ECP	*224.1*	*221.7*	*117.9*	*135.6*	*98.5*	*159.5*
From WCA2 to WCA3	*623.9*	*649.5*	*254.3*	*297.2*	*779.6*	*520.9*
from WCA3 total	1287.7	933.4	699.5	502.3	942.9	873.2
From WCA3 to ENP	*938.1*	*668.2*	*474.8*	*426.3*	*813.8*	*664.3*
Discharge from WCA3 out of EPA	*349.7*	*265.2*	*224.6*	*76.0*	*129.1*	*208.9*
Net to WCA3	69.2	576.2	134.6	457.4	424.9	332.5
Everglades National Park (ENP)						
Into ENP	1255.6	1098.8	710.1	596.6	1096.2	951.5
From Eastern Non-ECP	*317.6*	*430.6*	*235.2*	*170.3*	*282.4*	*287.2*
From WCA3 to ENP	*938.1*	*668.2*	*474.8*	*426.3*	*813.8*	*664.3*
Discharge out of ENP	4.315	14.931	24.967	12.28	11.30	13.6
Discharges into EPA from Non-ECP Basins						
Eastern Non-ECP Basin	460.8	605.9	383.4	361.4	531.1	468.5
Western Non-ECP Basin	224.1	221.7	117.9	135.6	98.5	159.5
Discharges Out of EPA[2]						
Discharges for Water Supply and Flood Control	542.6	468.6	486.2	185.4	422.8	421.1

Table Notes:
[1]*ACME discharges to WCA-1 were stopped and conveyed to C-51 for treatment in STA-1E.*
[2]*Water supply/flood releases discharged outside of the EPA.*

Table 10. TP load budgets for the EPA and inflow tributaries (mt/yr).

	WY2009	WY2010	WY2011	WY2012	WY2013	Five-Year Average
Discharges within EPA						
Water Conservation Area 1 (WCA-1 or Refuge)						
Into WCA1[1]	12.1	21.3	4.7	4.6	26.4	13.8
From STA+Diversion	*12.1*	*21.3*	*4.7*	*4.6*	*26.2*	*13.8*
From Eastern Non-ECP	*0.0*	*0.0*	*0.0*	*0.0*	*0.2*	*0.0*
from WCA1 total	19.6	18.2	7.2	0.4	16.2	12.3
From WCA1 to WCA2	*15.2*	*16.5*	*4.3*	*0.0*	*11.2*	*9.5*
Discharge from WCA1 out of EPA	*4.4*	*1.7*	*2.9*	*0.4*	*5.0*	*2.9*
Net to WCA1	-7.5	3.1	-2.5	4.3	10.2	1.5
Water Conservation Area 2 (WCA-2)						
Into WCA2	28.0	41.4	10.4	7.8	26.1	22.7
From STA+Diversion	*12.5*	*23.2*	*5.9*	*7.7*	*14.0*	*12.6*
From Eastern Non-ECP	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
From WCA1 to WCA2	*15.2*	*16.5*	*4.3*	*0.0*	*11.2*	*9.5*
from WCA2 total	8.6	10.6	6.2	6.6	10.4	8.5
From WCA2 to WCA3	*6.8*	*8.5*	*4.4*	*4.5*	*8.7*	*6.6*
Discharge from WCA2 out of EPA	*1.8*	*2.1*	*1.8*	*2.1*	*1.7*	*1.9*
Net to WCA2	19.5	30.8	4.2	1.2	15.7	14.3
Water Conservation Area 3 (WCA-3)						
Into WCA3	44.1	43.7	20.5	27.0	25.2	32.1
From STA+Diversion	*18.0*	*16.7*	*7.8*	*12.2*	*4.8*	*11.9*
From Eastern Non-ECP	*2.6*	*3.9*	*2.3*	*3.5*	*4.3*	*3.3*
From Western Non-ECP	*21.5*	*16.8*	*6.1*	*7.4*	*7.5*	*11.9*
From WCA2 to WCA3	*6.8*	*8.5*	*4.4*	*4.5*	*8.7*	*6.6*
from WCA3 total	16.5	14.3	9.4	7.5	10.7	11.7
From WCA3 to ENP	*9.7*	*9.1*	*5.4*	*5.0*	*8.0*	*7.4*
Discharge from WCA3 out of EPA	*6.8*	*5.2*	*4.0*	*2.5*	*2.7*	*4.2*
Net to WCA3	27.7	29.4	11.1	19.6	14.5	20.4
Everglades National Park (ENP)						
Into ENP	12.5	12.9	8.5	6.7	10.8	10.3
From Eastern Non-ECP	*2.8*	*3.8*	*3.1*	*1.8*	*2.8*	*2.9*
From WCA3 to ENP	*9.7*	*9.1*	*5.4*	*5.0*	*8.0*	*7.4*
Discharge out of ENP	0.0	0.1	0.1	0.1	0.1	0.1
Discharges into EPA from Non-ECP Basins						
Eastern Non-ECP Basin	5.4	7.6	5.4	5.3	7.3	6.2
Western Non-ECP Basin	21.5	16.8	6.1	7.4	7.5	11.9
Discharges Out of EPA[5]						
Discharges for Water Supply and Flood Control	13.1	9.0	8.8	5.0	9.5	9.1

Table Notes:

[1] *ACME discharges to WCA-1 were stopped and conveyed to C-51 for treatment in STA-1E.*

[2] *Water supply/flood releases discharged outside of the EPA.*

Table 11. FWM TP (ppb) for the EPA and inflow tributaries (mt/yr).

	WY2009	WY2010	WY2011	WY2012	WY2013	Five-Year Average
Discharges within EPA						
Water Conservation Area 1 (WCA-1 or Refuge)						
Into WCA1[1]	29	56	25	22	59	42
From STA+Diversion	*29*	*56*	*25*	*22*	*58*	*42*
From Eastern Non-ECP	*n/a*	*n/a*	*n/a*	*n/a*	*139*	*139*
from WCA1 total	48	30	27	18	27	32
From WCA1 to WCA2	*48*	*29*	*26*	*n/a*	*25*	*32*
Discharge from WCA1 out of EPA	*45*	*43*	*28*	*18*	*32*	*34*
Net to WCA1						
Water Conservation Area 2 (WCA-2)						
Into WCA2	25	27	18	16	20	23
From STA+Diversion	*18*	*26*	*16*	*18*	*18*	*20*
From Eastern Non-ECP	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
from WCA2 total	9	11	12	14	9	11
From WCA2 to WCA3	*9*	*11*	*14*	*12*	*9*	*10*
Discharge from WCA2 out of EPA	*13*	*11*	*10*	*21*	*20*	*12*
From WCA1 to WCA2	*48*	*29*	*26*	*n/a*	*25*	*32*
Net to WCA2						
Water Conservation Area 3 (WCA-3)						
Into WCA3	26	23	20	23	15	22
From STA+Diversion	*37*	*28*	*22*	*32*	*17*	*28*
From Eastern Non-ECP	*15*	*18*	*13*	*15*	*14*	*15*
From Western Non-ECP	*78*	*62*	*42*	*44*	*62*	*60*
From WCA2 to WCA3	*9*	*11*	*14*	*12*	*9*	*10*
from WCA3 total	10	12	11	12	9	11
From WCA3 to ENP	*8*	*11*	*9*	*9*	*8*	*9*
Discharge from WCA3 out of EPA	*16*	*16*	*14*	*26*	*17*	*16*
Net to WCA3						
Everglades National Park (ENP)						
Into ENP	8	10	10	9	8	9
From Eastern Non-ECP	*7*	*7*	*11*	*8*	*8*	*8*
From WCA3 to ENP	*8*	*11*	*9*	*9*	*8*	*9*
Discharge out of ENP	5	5	5	5	5	5
Discharges into EPA from Non-ECP Basins						
Eastern Non-ECP Basin	9	10	11	12	11	11
Western Non-ECP Basin	78	62	42	44	62	60
Discharges Out of EPA[5]						
Discharges for Water Supply and Flood Control	20	16	15	22	18	17

Table Notes:
[1]ACME discharges to WCA-1 were stopped and conveyed to C-51 for treatment in STA-1E.
[2]Water supply/flood releases discharged outside of the EPA.