APPENDIX G

NSRSM River Network Development

FIGURES

TABLES

LOWER EAST COAST RIVER DIMENSIONS

Hillsboro River

The Hillsboro River is spatially adjusted to 1940's aerial photography. The bottom elevation of the river's mouth is compared to the 1884 Coast and Geodetic Survey. The datum used for sounding data from the 1884 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8722859
NGVD29 = 0.66'
MLW = 0.15'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.15' – 0.78' = -0.63'
$MLW_{NGVD29\ 100}$ = -0.63' – 0.66' = -1.29'
$NGVD29_{100}$ = -1.29' – sounding

NGVD 29 for the 1884 map would be -1.29 feet. The 1884 map indicates a sounding of 5 ½ feet, or a bottom elevation of -6.79 feet NGVD 29.

Table G-1. Hillsboro River

NsRiv ID	Location	Depth[1]	Bottom Elev	Bottom Width[4]	Top Width[5]
300839	Hillsboro River - Trib1	5.0	-6.4[2]	80.0	100.0
300840	Hillsboro River - Trib1	5.0	-6.45[2]	80.0	100.0
300838	Hillsboro River - Trib1	5.0	-6.5[2]	80.0	100.0
300850	Hillsboro River - Trib2	5.0	-6.4[2]	80.0	100.0
300849	Hillsboro River - Trib2	5.0	-6.45[2]	80.0	100.0
300847	Hillsboro River - Trib2	5.0	-6.5[2]	80.0	100.0
300868	Hillsboro River	5.0	-6.25[2]	110.0	130.0
300867	Hillsboro River	5.0	-6.3[2]	110.0	130.0
300865	Hillsboro River	5.0	-6.35[2]	110.0	130.0
300863	Hillsboro River	5.0	-6.4[2]	110.0	130.0
300861	Hillsboro River	5.0	-6.45[2]	110.0	130.0
300859	Hillsboro River	5.0	-6.5[2]	110.0	130.0
300858	Hillsboro River	5.0	-6.55[2]	110.0	130.0
300857	Hillsboro River	5.0	-6.6[2]	110.0	130.0
300331	Hillsboro River	5.0	-6.7[2]	110.0	130.0
300330	Hillsboro River	5.0	-6.79[3]	110.0	130.0

1. Endnote 2 (Attachment A). An average depth of 5 feet is used.
2. Best professional judgment.
3. Value from 1884 Coast and Geodetic Survey was used.
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Based on DOQQ width ranges.

Cypress Creek

The Cypress Creek is spatially adjusted to the 1940's aerial photographs. There was no data from the Coast and Geodetic Survey. A bottom elevation at the down stream segment was assumed to be 0.0 NGVD 29.

Table G-2. Cypress Creek

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300809	Cypress Creek	3.5	0.3	151.0	165.0
300810	Cypress Creek	3.5	0.2	151.0	165.0
300808	Cypress Creek	3.5	0.1	151.0	165.0
300806	Cypress Creek	3.5	0.0	151.0	165.0
300272	Cypress Creek	3.5	-0.1	151.0	165.0
300271	Cypress Creek	3.5	-0.2	151.0	165.0
300270	Cypress Creek	3.5	-0.3	151.0	165.0

1. Endnote 7 (Attachment A). Depth estimated at 3 to 4 feet, using mean of 3.5 feet.
2. Best professional judgment was used.
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Endnote 6 (Attachment A). Surveyed widths range from 132 and 198 feet, using mean of 165 feet.

Middle River

The north and south forks of the Middle River uses width and general location from the GLO and is spatially adjusted to the DOQQ. The main river uses data, bottom and width, from the 1884 Coast and Geodetic Survey. This portion is also spatially adjusted to the DOQQ. The datum used for sounding data from the 1884 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8722859
NGVD29 = 0.69'
MLW = 0.16'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.16' – 0.78' = -0.62'
$MLW_{NGVD29\ 100}$ = -0.62' – 0.69' = -1.31'
$NGVD29_{100}$ = -1.31' – sounding

NGVD 29 for the 1884 map would be -1.31 feet. The north and south forks bottom elevation were obtained from the upstream reach of the main channel. Coast and Geodetic Survey depth information is only available for main segment of river.

Table G-3. Middle River

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[7]	Top Width
300789	Middle River – North Fork	4.0[1]	-6.6[3]	44.0	60.0[4]
300790	Middle River – North Fork	4.0[1]	-6.7[3]	64.0	80.0[4]
300791	Middle River – North Fork	4.0[1]	-6.8[3]	84.0	100.0[4]
300792	Middle River – North Fork	4.0[1]	-6.9[3]	84.0	100.0[5]
300259	Middle River – North Fork	4.0[1]	-7.0[3]	184.0	200.0[5]
300260	Middle River – North Fork	4.0[1]	-7.1[3]	224.0	240.0[5]
300261	Middle River – North Fork	4.0[1]	-7.2[3]	224.0	240.0[5]
300797	Middle River – South Fork	4.0[1]	-6.6[3]	44.0	60.0[4]
300798	Middle River – South Fork	4.0[1]	-6.7[3]	64.0	80.0[4]
300795	Middle River – South Fork	4.0[1]	-6.8[3]	84.0	100.0[4]
300796	Middle River – South Fork	4.0[1]	-6.9[3]	144.0	160.0[5]
300263	Middle River – South Fork	4.0[1]	-7.0[3]	144.0	160.0[5]
300264	Middle River – South Fork	4.0[1]	-7.1[3]	144.0	160.0[5]
300265	Middle River – South Fork	4.0[1]	-7.2[3]	144.0	160.0[5]
300266	Middle River	6.0[2]	-7.31[2]	126.0	150.0[6]
300267	Middle River	8.0[2]	-9.31[2]	268.0	300.0[6]
300268	Middle River	10.0[2]	-11.31[2]	460.0	500.0[6]

1. Endnote 12 (Attachment A). An estimated depth of 4 feet is used.
2. 1884 Coast and Geodetic Survey. Depths are within range specified in endnote 11 (Attachment A).
3. Best professional judgment was used.
4. Widths were tapered according to Coast and Geodetic Survey.
5. Endnote 11 (Attachment A), 158 feet width for south fork. There were 2 surveyed widths of the north fork 243 and 194 feet. A composite width of north fork, south fork, and GLO were used.
6. Composite value of 1884 Coast and Geotic survey and endnote 11 (Attachment A).
7. Calculated from depth, assumed side slope of 2.0 and top width

New River

The north and south forks of the New River uses width and general location from the GLO and is spatially adjusted to the DOQQ. 2 segments from the New River have sounding data from the 1884 Coast and Geodetic Survey. Remaining depths were adjusted from the 1884 soundings. The datum used for sounding data from the 1884 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8722859
NGVD29 = 0.69'
MLW = 0.16'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.16' – 0.78' = -0.62'
$MLW_{NGVD29\ 100}$ = -0.62' – 0.69' = -1.31'
$NGVD29_{100}$ = -1.31' – sounding

NGVD 29 for the 1884 map would be -1.31 feet.

Table G-4. New River

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[9]	Top Width
300254	New River – North Fork	10.0[1]	-3.5[3]	10.0	50.0[4]
300253	New River – North Fork	10.0[1]	-4.0[3]	30.0	70.0[4]
300252	New River – North Fork	10.0[1]	-4.5[3]	40.0	80.0[4]
300251	New River – North Fork	10.0[1]	-6.5[3]	60.0	100.0[4]
300250	New River – South Fork	10.0[1]	-7.2[3]	50.0	90.0[5]
300249	New River – South Fork	10.0[1]	-7.3[3]	60.0	100.0[5]
300248	New River – South Fork	10.0[1]	-7.4[3]	110.0	150.0[5]
300247	New River – South Fork	10.0[1]	-7.5[3]	80.0	120.0[5]
300246	New River – South Fork	10.0[1]	-7.6[3]	110.0	150.0[5]
300374	New River	10.0[2]	-11.0[3]	145.0	185.0[6]
300375	New River	10.0[2]	-11.1[3]	145.0	185.0[6]
300823	New River	10.0[2]	-11.2[3]	173.0	285.0[7]
300824	New River	10.0[2]	-11.31[2]	173.0	285.0[7]
300821	New River – Trib1	5.0[3]	-11.0[3]	40.0	60.0[8]
300822	New River – Trib1	5.0[3]	-11.1[3]	40.0	60.0[8]

1. Endnote 17 (Attachment A). South Fork having a depth varying from 3 to 20 feet. This was depth was also applied to the north fork.
2. The average sounding depths from the 1884 Coast and Geodetic Survey were used for the main river segment.
3. Best professional judgment was used.
4. Endnote 16 (Attachment A). North Fork widths range from 66 to 132 feet. Values used are a composite from (Attachment A) and DOQQ.
5. Endnote 16 from (Attachment A). South Fork widths range from 150 to 231 feet. Values used are a composite from C.M McVoy (Attachment A) and DOQQ.
6. Endnote 16 (Attachment A). Main width of 185' (Williams 1870 T50 R42).
7. 285 feet is a composite width from DOQQ, Attachment A, and Coast and Geodetic Survey.
8. Values from DOQQ were used.
9. Calculated from depth, assumed side slope of 2.0 and top width

Snake Creek

The north and south forks of Snake Creek uses width and general location from the GLO and is spatially adjusted to the DOQQ. 2 segments from Snake Creek have sounding data from the 1884 Coast and Geodetic Survey. Remaining depths were adjusted from the 1884 soundings. The datum used for sounding data from the 1884 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8723044
NGVD29 = 0.34'
MLW = 0.14'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.14' – 0.78' = -0.64'
$MLW_{NGVD29\ 100}$ = -0.64' – 0.34' = -0.98'
$NGVD29_{100}$ = -0.98' – sounding

NGVD 29 for the 1884 map would be -0.98 feet.

Table G-5. Snake Creek

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[6]	Top Width
300240	Big Snake Creek	5.0[1]	-6.5[3]	40.0	60.0[4]
300239	Big Snake Creek	5.0[1]	-6.6[3]	40.0	60.0[4]
300238	Big Snake Creek	5.0[1]	-6.7[3]	40.0	60.0[4]
300237	Big Snake Creek	5.0[1]	-6.8[3]	80.0	100.0[4]
300672	Big Snake Creek	5.0[1]	-6.9[3]	160.0	180.0[4]
300245	Little Snake Creek	5.0[1]	-6.5[3]	80.0	100.0[5]
300244	Little Snake Creek	5.0[1]	-6.6[3]	130.0	150.0[5]
300243	Little Snake Creek	5.0[1]	-6.7[3]	180.0	200.0[5]
300242	Little Snake Creek	5.0[1]	-6.8[3]	180.0	200.0[5]
300241	Little Snake Creek	5.0[1]	-6.9[3]	180.0	200.0[5]
300235	Snake Creek	6.0[2]	-6.98[2]	106.0	130.0[2]
300234	Snake Creek	6.0[2]	-6.98[2]	106.0	150.0[2]

1. Endnote 21 (Attachment A). Depth of 5 feet was used.
2. 1884 Coast and Geodetic Survey. Average of values was used.
3. Best professional judgment was used.
4. Endnote 20 (Attachment A). Big Snake Creek width was 66 and 176 feet. Values used are composite of endnote 20 and DOQQ.
5. Endnote 20 (Attachment A), Little Snake Creek width was 132 feet along. Values used are composite of endnote 20 and average widths from DOQQ.
6. Calculated from depth, assumed side slope of 2.0 and top width

Arch Creek

The Arch Creek, including the south fork, uses width and general location from the GLO. It could not be spatially adjusted to the DOQQ due to development. A nearby sounding at the mouth of Arch Creek from the 1884 Coast and Geodetic Survey has a depth of 5 feet or -6.20 feet NGVD29. The datum used for sounding data from the 1884 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8723089
NGVD29 = 0.55'
MLW = 0.13'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.13' – 0.78' = -0.65'
$MLW_{NGVD29\ 100}$ = -0.65' – 0.55' = -1.20'
$NGVD29_{100}$ = -1.20' – sounding

NGVD 29 for the 1884 map would be -1.20 feet.

Table G-6. Arch Creek

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300233	Arch Creek	10.0	-6.0	70.0	100.0
300232	Arch Creek	10.0	-6.05	70.0	110.0
300231	Arch Creek	10.0	-6.1	70.0	110.0
300773	Arch Creek	10.0	-6.15	90.0	130.0
300774	Arch Creek	10.0	-6.2	90.0	130.0
300756	Arch Creek – South Fork	10.0	-6.15	70.0	110.0
300755	Arch Creek – South Fork	10.0	-6.1	70.0	110.0
300754	Arch Creek – South Fork	10.0	-6.05	70.0	110.0
300753	Arch Creek – South Fork	10.0	-6.0	70.0	110.0

1. Endnote 25 (Attachment A). Estimated depth of 20 feet, but should not be considered the average. A depth of 10 feet is based on best professional judgment.
2. Best professional judgment based on Coast and Geodetic Survey point 6.20 ft NGVD29 at segment 300774.
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Endnote 24 from (Attachment A). The surveyed widths of the 2 forks ranged from 99 to 132 feet. Values used are composite of endnote 24 and GLO.

Little River

The Little River uses width and general location from the GLO and is spatially adjusted to the DOQQ. An 1876 Coast and Geodetic Survey has one sounding at the mouth of the river of 1.5 feet or -2.88 feet NGVD29. The datum used for sounding data from the 1876 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8723165
NGVD29 = 0.74'
MLW = 0.14'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.14' – 0.78' = -0.64'
$MLW_{NGVD29\ 100}$ = -0.64' – 0.74' = -1.38'
$NGVD29_{100}$ = -1.38' – sounding

NGVD 29 for the 1876 map would be -1.38 feet.

Table G-7. Little River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300329	Little River	4.0	-2.7	50.0	66.0
300328	Little River	4.0	-2.88	50.0	66.0

1. Endnote 30 from (Attachment A). Depths ranged from 2 to 6 feet, used an average of 4 feet.
2. Best professional judgment was used.
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Endnote 29 (Attachment A). Pre-drainage measurements are 66 feet.

Miami River

The Miami River uses width and general location from the GLO and is spatially adjusted to the DOQQ. An 1876 Coast and Geodetic Survey has one sounding at the mouth of the river of 6.75 feet or -8.3 feet NGVD29. The datum used for sounding data from the 1876 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8723165
NGVD29 = 0.74'
MLW = 0.14'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.14' – 0.78' = -0.64'
$MLW_{NGVD29\ 100}$ = -0.64' – 0.74' = -1.38'
$NGVD29_{100}$ = -1.38' – sounding

NGVD 29 for the 1876 map would be -1.38 feet.

Table G-8. Miami River

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[3]	Top Width[4]
300742	Miami River – North Fork	2.0[1]	-3.0[1]	32.0	40.0
300743	Miami River – North Fork	4.0[1]	-5.0[1]	44.0	60.0
300228	Miami River – North Fork	4.0[1]	-5.5[1]	64.0	80.0
300740	Miami River – South Fork	2.0[1]	-3.5[1]	72.0	80.0
300741	Miami River – South Fork	4.0[1]	-5.5[1]	64.0	80.0
300746	Miami River - Tributary	4.0[1]	-5.5[1]	64.0	80.0
300748	Miami River - Tributary	4.0[1]	-6.0[1]	64.0	80.0
300749	Miami River - Tributary	4.0[1]	-6.5[1]	64.0	80.0
300227	Miami River	6.0[1]	-6.0[1]	176.0	200.0
300675	Miami River	6.0[1]	-6.5[1]	176.0	200.0
300676	Miami River	6.0[1]	-7.0[1]	176.0	200.0
300744	Miami River	6.0[1]	-7.5[1]	176.0	200.0
300745	Miami River	6.75[2]	-8.13[2]	173.0	200.0

1. Best professional judgment was used.
2. Value from 1876 Coast and Geodetic Survey.
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Endnote 34 (Attachment A). Below confluence width of 198 feet, length varies from 200 to 300 feet, and at locations narrow as 130 feet. Fork widths from 83 to 39 feet. Values used are composite of GLO and endnote 34.

Black Creek

The Black Creek uses width and spatial location from the DOQQ. No data was available from the GLO. An 1852 Coast and Geodetic Survey have one sounding at the mouth of the river of 3.0 feet or -4.08 feet NVGD. The datum used for sounding data from the 1852 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8723423
NGVD29 = 0.42'
MLW = 0.12'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.12' – 0.78' = -0.66'
$MLW_{NGVD29\ 100}$ = -0.66' – 0.42' = -1.08'
$NGVD29_{100}$ = -1.08' – sounding
NGVD 29 for the 1852 map would be -1.08 feet.

Table G-9. Black Creek

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[4]	Top Width[5]
300354	Black Creek	3.0[1]	-1.5[3]	88.0	100.0
300355	Black Creek	3.0[1]	-1.75[3]	88.0	100.0
300356	Black Creek	3.0[1]	-2.0[3]	88.0	100.0
300357	Black Creek	3.0[1]	-2.25[3]	88.0	100.0
300358	Black Creek	3.0[1]	-2.5[3]	88.0	100.0
300359	Black Creek	3.0[1]	-2.75[3]	88.0	100.0
300360	Black Creek	3.0[1]	-3.0[3]	88.0	100.0
300370	Black Creek	3.0[1]	-3.25[3]	88.0	100.0
300371	Black Creek	3.0[1]	-3.5[3]	88.0	100.0
300372	Black Creek	3.0[1]	-3.75[3]	88.0	100.0
300373	Black Creek	3.0[2]	-4.08[2]	88.0	100.0

1. Endnote 7 (Attachment A), for Cypress Creek, uses depth estimates of 3 to 4 feet. The smaller depth is used since it corresponds to estimates from Coast and Geodetic Survey.
2. Values used from 1852 Coast and Geodetic Survey.
3. Best professional judgment was used.
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Values estimated from DOQQ.

ATTACHMENT A

Endnotes from *Pre-drainage Surface Hydrology of the Eastern Everglades, Coastal ridge, and the Coastal Rivers* (SFWMD, C. McVoy, unpublished)

Endnotes

[1] Hillsboro River width shown on plat map (Williams 1870-T48 R43) appears similar to the New River (Williams 1870-T50 R42), so estimate based on New River width. Surveyed widths from field notes for plat would be a better source, but field notes for this township were not presently available.

[2] Hillsboro River depth (average for river) estimated from description of 6 feet deep at the mouth (Williams 1837) and from Cooley's 1851 description of the Boca Ratones River (a branch of the Hillsboro) having "an average on this section of 5 feet in depth" (Knetsch 1989). In addition, the presence of multiple upstream branches suggested deeper rather than shallower.

[3] Hillsboro River headwater elevation estimated from USGS (1983a-Boca) (7-12 feet), using pre-drainage estimates of location of headwaters (Williams 1870-T47 R43; Austin *et al.* 1977), and assumption of 2-3 feet of peat subsidence. Peat subsidence estimated from soil types and vegetation present in 1940s (Jones et al. 1948). For comparison, Austin *et al.* (1977) reported pine flatwoods in the area at 17 feet and the swamp system at 14-15 ft.

[4] Hillsboro River length is less clear than for other rivers as multiple branches intergraded with an extensive network of cypress swamps, which in turned drained from the Everglades (Vignoles 1823; Williams 1837; Austin *et al.* 1977). A northward running fork was the longest, about 11 miles long (Williams 1870-T47 R43, Williams 1870-T48 R43). The several westward branches appear to have been about 6-7 miles long from head to river mouth (Williams 1870-T47 R43, Williams 1870-T48 R43).

[5] Hillsboro River slope: "...the rush of water through this narrow channel [one of branches of the Hillsboro River] is very great, the current driving with a velocity capable of giving motion to the largest [water] wheels, and upon it several saw-mills might work with advantage, should the Florida pitch pine which is abundantly supplied by the adjacent woods, ever become in sufficient demand as lumber." (Vignoles 1823, p. 49).

[6] Cypress Creek width based on plat maps (Williams 1870-T49 R42; Williams 1870-T49 R43), and on surveyed widths of 132 and 198 feet near the headwaters in Section 11, Township 49 Range 42 (Williams 1870-T49 R42). Current width of the apparently least altered portions is 150-200 feet (USGS 1986-Pompano).

[7] Cypress Creek depth - no pre-drainage measurements found. Depth estimated at 3-4 feet based on assumption (from general reading of historical literature) that Cypress Creek was somewhat smaller than other rivers. Current depth in Section 6, Township 49, Range 43 is about 6 feet (USGS 1986).

[8] Cypress Creek headwater elevation based on headwater location in Section 11, T 49 R 42 (Williams 1870-T49 R42), on current elevations there of 6-7 feet (USGS (1969; 1986), and assumption of 0-1 feet of post-drainage peat subsidence. Subsidence assumed from soil types and cypress vegetation present in 1940s (Jones *et al.* 1948).

[9] Cypress Creek length from plat maps (Williams 1870-T49 R42; Williams 1870-T49 R43; Williams 1870-T50 R42). After running east from the cypress swamps, creek ran mostly south, parallel to coast, and discharged into the New River Inlet. North-south portion dredged in the 1890s to become part of the Intracoastal Waterway.

[10] Cypress Creek slope – if one assumes that the last five miles of the New River (the "Inlet"), running parallel to the coast, was at or very close to sea level, then the slope for Cypress Creek would be 9 inches per mile.

[11] Middle River width based on two surveyed widths of 147 and 308 feet below confluence of the two forks (MacKay 1845-T50 R42 and Williams 1870-T49 R42; different locations), and on one surveyed width of the south fork (158 feet) and two surveyed widths of the north fork (243 and 194 feet) (all from Williams 1870-T49 R42). Current width of the apparently least altered portions below confluence of forks is 250-300 feet (USGS 1983b-Ft Laud So).

[12] Middle River depth – no pre-drainage measurements found. Shallow four feet depth estimate based on assumption that Middle River was somewhat smaller than other rivers. Current depth below confluence of forks is about 6 feet (USGS 1986).

[13] Middle River headwater elevation based on headwater locations in Sections 17 and 21, Township 49 Range 42 (Williams 1870-T49 R42), on current elevations there of 6-8 feet (USGS 1969), and 1-2 feet of peat subsidence assumed. Estimates may be somewhat lower than expected (e.g., in comparison with New River) because Middle River did not extend all the way west to the Everglades. There likely was an elevation drop within the intervening 4-6 miles of cypress swamp.

[14] Middle River length from plat maps (Williams 1870-T49 R42 and Williams 1870-T50 R42).

[15] New River included two major forks (Cooley 1851 in Knetsch 1989 noted a total of four forks).

[16] New River width based on sum of widths of North and South Forks, and on width in main section, that is, above confluence with Middle River and Cypress Creek, and below confluence of North and South Forks of New River (Sections 10 and 11, T 50 R42). Surveyed main width was 185 feet (Williams 1870-T50 R42). Surveyed widths for the North Fork are 66 feet (MacKay 1845-T50 R42), and 132, and 132+ feet (Williams 1870-T50 R42). Surveyed widths for the South Fork were 231 feet (MacKay 1845-T50 R42), and 207 feet (Williams 1870-T50 R42). Henshall in 1883 described the South Fork as having "about an average width of fifty yards (150 feet) (Reiger 1971). Williams (1870)-T50 R42 also surveyed a width of 20 feet for one of the 6 to 8 prongs at the very top of the South Fork. Current width of the apparently least altered portions in the main section is ca. 200 feet (USGS 1983b-Ft Laud So).

[17] New River depths based on accounts such as Gifford (1911): "generally deep, but very deep in places, one spot having a depth of eighty-five feet," and Pierce, who grew up in So. Florida in the 1880s: "A rather narrow but very deep stream, it is said to have a depth of more than sixty feet in places." Pierce (1970). Henshall 1883, in Reiger (1971), describes the South Fork as having "a varying depth of from three to twenty feet." A Report of the Joint Committee of the Florida Legislature for the year 1907, on the drainage of the Everglades states: "We found the depth of water in New River to be on an average of about 20 feet." (Senate Doc. 89 (1911). Cooley, 1851 in Knetsch (1989) notes: "we there [from Section 12, T 50 R 42] ascended New River about 8 miles to the Everglades this section is good steam navigation." Note that this eight mile distance would indeed have extended close to the headwaters at the edge of the Everglades (Williams 1870-T50 R42). USGS (1983b-Ft Laud So) notes depths of 7, 8, 13,and 37 feet in the main section of the New River (see width endnote for location).

[18] New River headwater elevation estimated from pre-drainage location of headwaters of North Fork (Section 31 T49 R42) and South Fork, (Section 19 T50 R42), post peat-subsidence elevations, and estimates of original peat thickness. Estimates for the North and South Fork elevations were averaged (N was about 1 foot higher). Headwater locations from plat maps (Williams 1870-T49 R42 and Williams 1870-T50 R42). Post peat-subsidence elevation for North Fork was about 8 feet (USGS 1969), for South Fork about 6.5 feet; (USGS 1983b-Ft. Laud So). Post peat-subsidence elevations were assumed to include essentially no peat (Stephens and Johnson 1951). Estimates of original peat thickness in the South Fork area were 3-5 feet (Anonymous 1907); 3-6 feet, John Newman in Senate Doc. 89 (1911); 3-4 feet (Baldwin and Hawker 1915); 3 feet (west of South Fork, and after 16 years of subsidence, Mitchell *et al.* 1928b); and 4 feet (Stephens and Johnson 1951). In the North Fork area, pre-drainage peat thicknesses may have been somewhat less.

[19] New River length from Williams (1870)-T50 R42 and from (USGS 1969; 1983b-Ft. Laud So). Note also endnote on depth.

[20] Snake Creek width based on sum of surveyed widths for Little and Big Snake Creeks and on width below confluence. Surveyed width for Little Snake Creek was 132 feet (Williams 1870-T52 R42), and for Big Snake Creek was 66 feet (Mackay 1845-T52 R42), and 66 and 176 feet (Williams 1870-T52 R42). Below confluence width was 264 feet (Williams 1870-T52 R42). Current width of the apparently least altered portions in the below confluence section is ca. 200 feet USGS (1988b-No Miami).

[21] Snake Creek depth estimated from measured depth of 5 feet on Big Snake Creek (Mackay 1845-T52 R42, and regular use of Snake Creek as an Indian (R. Carr, pers. comm., 2000) and early settler (Pierce 1970) navigation route from Biscayne Bay to the Everglades.

[22] Snake Creek headwater elevation estimated from USGS (1988)-No Miami, using Williams (1870)-T51 R42, Newman (1908)-T52 R41, and Williams (1870)-T52 R42 for location. 1-2 feet of peat subsidence assumed, based on soil mapping (Jones *et al.* 1948).

[23] Snake Creek length an average of Little and Big Snake Creeks (similar), based on plat maps (Williams 1870-T51 R42; Williams 1870-T52 R42).

[24] Arch Creek width based on sum of surveyed widths for the two forks, 99 and 132 feet (Williams 1870-T52 R42). Width seems to have varied considerably along length of creek, with circa 50 feet on north fork at natural bridge (Parks 1977) and 99 feet below the arch (Williams 1870-T52 R42). At point where width was 99 feet, the depth was 20 feet , suggesting that this was a narrow point in the north fork.

[25] Arch Creek depth estimated from measured depth of 20 feet (Williams 1870-T52 R42), which would certainly not be applicable as average depth, but does give a sense of river volume, and from photographs (Parks 1977).

[26] Arch Creek headwater elevation estimated from USGS (1988b-No Miami), using Williams (1870)-T52 R41, and Williams (1870)-T52 R42 for location.

[27] Arch Creek length average of north and south forks, based on plat map (Williams 1870-T52 R42).
[28] Arch Creek slope. The current in pre-drainage Arch Creek was apparently sufficient for two partners to spend one year (1858) endeavoring to set up a water mill for coontie processing at the Natural Arch (Dietrich 1987).
[29] Little River width as drawn on plat map (Williams 1870-T53 R42) appears to have been fairly constant along length. The two available pre-drainage measurements (from same point) are both 66 feet: MacKay (1845)-T53 R42 and Williams (1870)-T53 R42. Post-drainage estimate is about 100 feet (USGS 1988a-Miami).
[30] Little River depth estimated from 2.5 feet depth measured in April at river mile 1, circa 0.5 mile from headwaters (MacKay 1845-T53 R42), from 2-6 depth given by Depuis (1954) for closer to river mouth, and recorded boat travel. Prior to construction of the muck canals, Gov. Broward and his party "went up Little River to the Everglades" in the "little yacht Linnet" (Anonymous 1905), during the dry season (Feb 16, 1905).
[31] Little River headwater elevation may be somewhat lower than regional Everglades levels due to elevation drop within relatively long (4 miles) transverse glade (c.f. plat map, MacKay 1845-T53 R41).
[32] Little River length is estimated from MacKay (1845)-T53 R42 (field notes) and Williams (1870)-T53 R42 (plat).
[33] Little River slope. MacKay (1845)-T53 R42 reports a race way for a coontie (starch) mill near the Little River.
[34] Miami River width estimated from surveyed withs of the forks of 83 and 39 feet, and below confluence width of 198 feet (all MacKay 1845-T53 R41). The width varied along the length, with sections 200 to 300 feet wide, points as narrow as 130 feet. See Gaby (1993), p. 4-5.
[35] Miami River depth estimated from boat navigation and from Gaby (1993). Note that tour boats ("well over 40 feet" Gaby 1993) made regular excursions right up to the bottom of the rapids in the north fork prior to drainage: the tour boat *Leo* of Rev. William Phipps starting about 1902, and the tour boat *Sallie* of Captain Burch starting about 1903 (Gaby 1993): "From the earliest times, boats drawing as much as four feet could go as far as Ferguson's Creek" (i.e., to the base of the rapids in the north fork).
[36] Miami River headwaters elevation estimated from pre-drainage surveys in 1849 and 1898. The first survey was done at request of the U.S. Secretary of the Treasury by the U.S. Coast Survey (Bache 1850). This survey found that "the level of the water in the glades was 6 feet 2.5 inches above low tide in the gulf," but noted also that "when the levelings were made, the level of the water in the glades was stated to be lower, and the tide in the gulf higher than ordinary," so this would constitute a low estimate of typical headwater elevation. The 1898 survey found that , "The *Mean* of three surveys, 6 ft 11 inches, can be safely taken as the amount of fall from the head of the Rapids of the Miami River to tide water in Biscayne Bay..." (Rose 1898).
[37] Miami River length surveyed as 3 and 3/4 miles (Bache 1850) This is consistent with the plat maps (MacKay 1845-T53 R41 and MacKay 1845-T54 R42).
[38] Miami River slope was described in a Report of the Superintendent of the Coast Survey for 1849 as: "The average fall per mile thus ascertained by Mr. Gerdes is nineteen inches and eighty-seven hundredths." (Bache 1850). The same report noted that at the time of the survey, "the level of the water in the glades was stated to be lower, and the tide in the gulf higher than ordinary," so the slope estimate was recognized as a likely underestimate (Bache 1850). Current in the South Fork: "Brewer with his pole in the stern, and myself with the Canadian paddle in the bow, made rapid headway against the current, which was getting stronger and stronger. ... Very soon we saw large white objects ahead, which proved to be balls of foam hurrying down with the current. With a quick turn to the left, after about three miles of paddling, we struck the South Fork, the water becoming swifter and swifter, and the cotton-like balls larger and more numerous. We were on the falls, and how the water did run! I could hear Brewer panting behind me, but I never turned my head or gave any signal that we were conquered, but started in on my old-time stroke, inch by inch crawling up that water, dodging the rocks. After about three-quarters of an hour of the hardest paddling I think I have ever done, the water slowed up a little, and we could get some speed on the canoe. The trees opened up more, the stream becoming narrower and narrower, until we came to an opening where everything was clear ahead.
This was the edge of the Everglades... The stream here loses itself among the lily-pads and before you lies a sea of apparently pathless grass. On closer observation shallow water-courses are seen running through the grass, cutting in all directions..." (Willoughby 1898, p.39-40). Gaby (1993) notes that the North Fork of the Miami River was narrower than the South Fork described by Willoughby (1898), apparently passed a greater volume of water; and was generally used as the return route to Miami by Indians and explorers of the Everglades.

SOUTHWEST COAST RIVER DIMENSIONS

Huston River

The Huston River is spatially adjusted to the 1930 U.S. Coast and Geodetic Survey map. The datum used for sounding data is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8724919
NGVD29 = 0.87'
MLW = 0.37'
100 yr Sea level rise = 0.77'

MLW_{100} = 0.37' – 0.77' = -0.40'
$MLW_{NGVD29\ 100}$ = -0.40' – 0.87' = -1.27'
$NGVD29_{100}$ = -1.27' – sounding

NGVD 29 for the 1890 map would be -1.27 feet.

Table G-10. Huston River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[4]	Top Width[3]
300904	Huston River	5.0	-3.20[5]	130.0	150.0
300905	Huston River	5.0	-3.30[5]	980.0	1000.0
300906	Huston River	5.0	-3.40[5]	2980.0	3000.0
300426	Huston River	5.0	-3.51	1180.0	1200.0
300425	Huston River	5.0	-3.93	1980.0	2000.0
300424	Huston River	5.0	-8.17	780.0	800.0
300423	Huston River	5.0	-8.10	980.0	1000.0
300422	Huston River	5.0	-7.38	980.0	1000.0
300421	Huston River	5.0	-6.32	1180.0	1200.0

1. Average of all soundings in Huston River from 1930 U.S. Coast and Geodetic Survey map
2. Average of all soundings for each reach in Huston River from 1930 U.S. Coast and Geodetic Survey map
3. Estimated from DOQQ
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Best professional judgment

Chatam River

The Chatam River is spatially adjusted to the 1930 U.S. Coast and Geodetic Survey map. The datum used for sounding data is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8724919
NGVD29 = 0.87'
MLW = 0.37'
100 yr Sea level rise = 0.77'

MLW_{100} = 0.37' – 0.77' = -0.40'
$MLW_{NGVD29\ 100}$ = -0.40' – 0.87' = -1.27'
$NGVD29_{100}$ = -1.27' – sounding

NGVD 29 for the 1890 map would be -1.27 feet.

Table G-11. Chatam River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[4]	Top Width[3]
30898	Chatam River	5.0	-5.70[5]	280.0	300.0
300899	Chatam River	5.0	-5.60[5]	330.0	350.0
300427	Chatam River	5.0	-6.54	580.0	600.0
300428	Chatam River	5.0	-6.22	430.0	450.0
300308	Chatam River	5.0	-5.71	480.0	500.0
300307	Chatam River	5.0	-6.25	780.0	800.0
300429	Chatam River	5.0	-7.48	680.0	700.0
300430	Chatam River	5.0	-8.00	780.0	800.0
300431	Chatam River	5.0	-4.92	1980.0	2000.0

1. Average of all soundings in Chatam River from 1930 U.S. Coast and Geodetic Survey map
2. Average of all soundings for each reach in Chatam River from 1930 U.S. Coast and Geodetic Survey map
3. Estimated from DOQQ
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Best professional judgment

Lostman's River

The Lostman's River is spatially adjusted to the 1930 U.S. Coast and Geodetic Survey map. The datum used for sounding data is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8724919
NGVD29 = 0.87'
MLW = 0.37'
100 yr Sea level rise = 0.77'

MLW_{100} = 0.37' – 0.77' = -0.40'
$MLW_{NGVD29\ 100}$ = -0.40' – 0.87' = -1.27'
$NGVD29_{100}$ = -1.27' – sounding

NGVD 29 for the 1890 map would be -1.27 feet.

Table G-12. Lostman's' River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[4]	Top Width[3]
300875	Lostman's River	5.0	-4.30[5]	30.0	50.0
300876	Lostman's River	5.0	-4.35[5]	55.0	75.0
300877	Lostman's River	5.0	-4.40[5]	180.0	200.0
300878	Lostman's River	5.0	-4.45[5]	80.0	100.0
300879	Lostman's River	5.0	-4.50[5]	130.0	150.0
300880	Lostman's River	5.0	-4.55[5]	380.0	400.0
300881	Lostman's River	5.0	-4.60[5]	1980.0	2000.0
300882	Lostman's River	5.0	-4.65[5]	1980.0	2000.0
300883	Lostman's River	5.0	-4.70[5]	1980.0	2000.0
300438	Lostman's River	5.0	-5.64	2480.0	2500.0
300439	Lostman's River	5.0	-5.65	1480.0	1500.0
300440	Lostman's River	5.0	-5.41	1180.0	1200.0
300441	Lostman's River	5.0	-7.17	1480.0	1500.0
300442	Lostman's River	5.0	-6.02	2480.0	2500.0
300443	Lostman's River	5.0	-8.29	1480.0	1500.0
300437	Lostman's River	5.0	-4.74	1480.0	1500.0
300436	Lostman's River	5.0	-6.36	680.0	700.0
300435	Lostman's River	5.0	-4.44	580.0	600.0
300434	Lostman's River	5.0	-2.51	80.0	100.0
300433	Lostman's River	5.0	-4.72	130.0	150.0
300432	Lostman's River	5.0	-6.93	180.0	200.0
300310	Lostman's River	5.0	-10.30	730.0	750.0
300309	Lostman's River	5.0	-6.20	1980.0	2000.0

1. Average of all soundings in Lostman's River from 1930 U.S. Coast and Geodetic Survey map
2. Average of all soundings for each reach in Lostman's River from 1930 U.S. Coast and Geodetic Survey map
3. Estimated from DOQQ
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Best professional judgment

Broad River

The Broad River is spatially adjusted to the 1930 U.S. Coast and Geodetic Survey map. The datum used for sounding data is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8724919
NGVD29 = 0.87'
MLW = 0.37'
100 yr Sea level rise = 0.77'

MLW_{100} = 0.37' – 0.77' = -0.40'
$MLW_{NGVD29\ 100}$ = -0.40' – 0.87' = -1.27'
$NGVD29_{100}$ = -1.27' – sounding

NGVD 29 for the 1890 map would be -1.27 feet.

Table G-13. Broad River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[4]	Top Width[3]
300871	Broad River	5.0	-5.90[5]	80.0	100.0
300872	Broad River	5.0	-6.00[5]	130.0	150.0
300873	Broad River	5.0	-6.10[5]	130.0	150.0
300874	Broad River	5.0	-6.20[5]	280.0	300.0
300455	Broad River	5.0	-4.27[5]	30.0	50.0
300456	Broad River	5.0	-4.27[5]	30.0	50.0
300457	Broad River	5.0	-4.27[5]	280.0	300.0
300458	Broad River	5.0	-5.21	480.0	500.0
300459	Broad River	5.0	-6.29	430.0	450.0
300460	Broad River	5.0	-5.31	380.0	400.0
300461	Broad River	5.0	-5.88	280.0	300.0
300454	Broad River	5.0	-7.41	180.0	200.0
300453	Broad River	5.0	-6.53	280.0	300.0
300452	Broad River	5.0	-5.96	730.0	750.0
300451	Broad River	5.0	-5.75	1180.0	1200.0
300450	Broad River	5.0	-6.31	980.0	1000.0
300449	Broad River	5.0	-9.03	380.0	400.0
300448	Broad River	5.0	-9.05	230.0	250.0
300447	Broad River	5.0	-9.74	230.0	250.0
300446	Broad River	5.0	-9.47	230.0	250.0
300445	Broad River	5.0	-9.57	380.0	300.0
300444	Broad River	5.0	-6.11	580.0	600.0

1. Average of all soundings in Broad River from 1930 U.S. Coast and Geodetic Survey map
2. Average of all soundings for each reach in Broad River from 1930 U.S. Coast and Geodetic Survey map
3. Estimated from DOQQ
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Best professional judgment

Shark River

The Shark River is spatially adjusted to the 1930 U.S. Coast and Geodetic Survey map. The datum used for sounding data is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8724919
NGVD29 = 0.87'
MLW = 0.37'
100 yr Sea level rise = 0.77'

MLW_{100} = 0.37' – 0.77' = -0.40'
$MLW_{NGVD29\ 100}$ = -0.40' – 0.87' = -1.27'
$NGVD29_{100}$ = -1.27' – sounding

NGVD 29 for the 1890 map would be -1.27 feet.

Table G-14. Shark River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[4]	Top Width[3]
300311	Shark River	6.5	-4.27[5]	4.0	30.0
300312	Shark River	6.5	-4.27[5]	24.0	50.0
300313	Shark River	6.5	-4.27[5]	4.0	30.0
300314	Shark River	6.5	-4.27[5]	24.0	50.0
300315	Shark River	6.5	-4.27[5]	24.0	50.0
300316	Shark River	6.5	-4.27[5]	24.0	50.0
300317	Shark River	6.5	-4.27[5]	4.0	30.0
300318	Shark River	6.5	-4.27[5]	124.0	150.0
300319	Shark River	6.5	-4.27[5]	74.0	100.0
300462	Shark River	6.5	-4.27[5]	174.0	200.0
300463	Shark River	6.5	-4.27[5]	174.0	200.0
300464	Shark River	6.5	-4.27[5]	174.0	200.0
300465	Shark River	6.5	-4.27[5]	154.0	180.0
300466	Shark River	6.5	-4.27[5]	124.0	150.0
300467	Shark River	6.5	-4.27[5]	74.0	100.0
300468	Shark River	6.5	-4.88	174.0	200.0
300469	Shark River	6.5	-5.42	974.0	1000.0
300470	Shark River	6.5	-6.05	1174.0	1200.0
300471	Shark River	6.5	-7.65	974.0	1000.0
300483	Shark River	6.5	-7.82	374.0	400.0
300484	Shark River	6.5	-7.38	324.0	350.0
300485	Shark River	6.5	-8.93	324.0	350.0
300486	Shark River	6.5	-8.6	374.0	400.0
300487	Shark River	6.5	-8.73	324.0	350.0
300324	Shark River	6.5	-9.32	374.0	400.0
300323	Shark River	6.5	-9.9	274.0	300.0
300322	Shark River	6.5	-9.03	324.0	350.0
300327	Shark River	6.5	-9.49	224.0	250.0
300326	Shark River	6.5	-9.39	374.0	400.0
300325	Shark River	6.5	-9.21	624.0	650.0

1. Average of all soundings in Shark River from 1930 U.S. Coast and Geodetic Survey map
2. Average of all soundings for each reach in Shark River from 1930 U.S. Coast and Geodetic Survey map
3. Estimated from DOQQ
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Best professional judgment

Harney River

The Harney River is spatially adjusted to the 1930 U.S. Coast and Geodetic Survey map. The datum used for sounding data is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8724919
NGVD29 = 0.87'
MLW = 0.37'
100 yr Sea level rise = 0.77'

MLW_{100} = 0.37' – 0.77' = -0.40'
$MLW_{NGVD29\ 100}$ = -0.40' – 0.87' = -1.27'
$NGVD29_{100}$ = -1.27' – sounding

NGVD 29 for the 1890 map would be -1.27 feet.

Table G-15. Harney River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[4]	Top Width[3]
300886	Harney River	6.5	-7.20[5]	49.0	75.0
300888	Harney River	6.5	-7.25[5]	49.0	75.0
300890	Harney River	6.5	-7.30[5]	174.0	200.0
300892	Harney River	6.5	-7.35[5]	274.0	300.0
300894	Harney River	6.5	-7.40[5]	674.0	700.0
300896	Harney River	6.5	-7.45[5]	974.0	1000.0
300897	Harney River	6.5	-7.50[5]	474.0	500.0
300479	Harney River	6.5	-7.55	398.0	424.0
300478	Harney River	6.5	-7.73	274.0	300.0
300477	Harney River	6.5	-7.04	274.0	300.0
300476	Harney River	6.5	-7.51	324.0	350.0
300475	Harney River	6.5	-6.93	324.0	350.0
300474	Harney River	6.5	-7.55	474.0	500.0
300473	Harney River	6.5	-8.07	274.0	300.0
300472	Harney River	6.5	-8.34	324.0	350.0
300482	Harney River	6.5	-8.22	324.0	250.0
300481	Harney River	6.5	-7.93	374.0	400.0
300480	Harney River	6.5	-5.73	424.0	450.0
300321	Harney River	6.5	-9.08	324.0	350.0
300320	Harney River	6.5	-7.64	424.0	450.0

1. Average of all soundings in Harney River from 1930 U.S. Coast and Geodetic Survey map
2. Average of all soundings for each reach in Harney River from 1930 U.S. Coast and Geodetic Survey map
3. Estimated from DOQQ
4. Calculated from depth, assumed side slope of 2.0 and top width
5. Best professional judgment

ST. LUCIE RIVER DIMENSIONS

North Fork – Northern Tributaries

Data sources used to construct the tributaries were from DOQQs. The spatial extent of tributary was refined using the DOQQs. The bottom elevations were estimated from the USGS 5 foot contour lines. Spatial locations were compared, where available, with the GLO plat maps. Four segments (300685, 300760, 300716, 300717) were in the general area of the GLO maps; it is assumed that the DOQQs provide a more realistic representation of spatial location.

Table G-16. St. Lucie River North Fork, Northern Tributaries

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300718	St Lucie North Fork – Trib 1a	5.0	10.0	30.0	50.0
300719	St Lucie North Fork – Trib 1a	5.0	8.0	30.0	50.0
300720	St Lucie North Fork – Trib 1b	5.0	10.0	10.0	30.0
300721	St Lucie North Fork – Trib 1b	5.0	8.0	10.0	30.0
300699	St Lucie North Fork – Trib 1	5.0	-2.0	60.0	80.0
300698	St Lucie North Fork – Trib 1	5.0	-4.1	60.0	80.0
300696	St Lucie North Fork – Trib 1	5.0	-4.2	60.0	80.0
300685	St Lucie North Fork – Trib 1	5.0	-4.3	60.0	80.0
300760	St Lucie North Fork – Trib 1	5.0	-4.5	60.0	80.0
300716	St Lucie North Fork – Trib 1c	5.0	0.0	30.0	50.0
300717	St Lucie North Fork – Trib 1c	5.0	-4.0	30.0	50.0

1. Best professional judgment
2. USGS Contours
3. Calculated from depth, assumed side slope of 2.0 and top width
4. DOQQ

North Fork

Dimensions for the North Fork of the St Lucie River were derived from DOQQ and bathymetric data. Data were averaged along each model river reach. The spatial extent of tributary was refined using the DOQQ. * denotes a shunt connection with the estuary, modeled using the lake package. Spatial location was compared with the GLO plat maps and it is assumed that the DOQQs provide a more realistic representation of spatial location.

Table G-17. St. Lucie River North Fork

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300761	St Lucie North Fork	8.0	-4.69	118.0	150.0
300628	St Lucie North Fork	8.0	-6.79	168.0	200.0
300629	St Lucie North Fork	8.0	-7.09	168.0	200.0
300630	St Lucie North Fork	8.0	-9.25	168.0	200.0
300631	St Lucie North Fork	8.0	-9.00	168.0	200.0
300632	St Lucie North Fork	8.0	-10.20	168.0	200.0
300633	St Lucie North Fork	8.0	-12.95	168.0	200.0
300634	St Lucie North Fork	8.0	-10.73	168.0	200.0
300635	St Lucie North Fork	8.0	-10.42	168.0	200.0
300636	St Lucie North Fork	8.0	-10.26	218.0	250.0
300637*	St Lucie North Fork	8.0	-10.5	268.0	300.0

1. Best professional judgment
2. Bathymetry
3. Calculated from depth, assumed side slope of 2.0 and top width
4. DOQQ

North Fork – Southern Tributaries

The North Fork tributaries were derived from DOQQs. The spatial extent of tributary was refined using the DOQQ. The bottom elevations were estimated from the USGS 5 foot contour lines. * denotes a shunt connection with the estuary, modeled using the lake package. Spatial location was compared with the GLO plat maps and it is assumed that the DOQQs provide a more realistic representation of spatial location.

Table G-18. St. Lucie River North Fork, Southern Tributaries

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300714	St Lucie North Fork – Trib 2b	8.0	-5.7	68.0	100.0
300715	St Lucie North Fork – Trib 2b	8.0	-5.8	68.0	100.0
300712	St Lucie North Fork – Trib 2a	8.0	-5.8	68.0	100.0
300713	St Lucie North Fork – Trib 2a	8.0	-5.9	68.0	100.0
300775	St Lucie North Fork – Trib 2a	8.0	-6.0	68.0	100.0
300776*	St Lucie North Fork – Trib 2a	8.0	-6.0	68.0	100.0

1. Best professional judgment
2. USGS Contours
3. Calculated from depth, assumed side slope of 2.0 and top width
4. DOQQ

St. Lucie – Tributary 1

The tributaries used DOQQ data. The spatial extent of tributary was refined using the DOQQ. The bottom elevations were estimated from the USGS 5 foot contour lines. * denotes a shunt connection with the estuary, modeled using the lake package. Spatial location was compared with the GLO plat maps and it is assumed that the DOQQs provide a more realistic representation of spatial location. An 1883 depth sounding of 8.25 ft was used at segment 300778. To convert this to the vertical datum NGVD29:

NOAA Station 8722371
NGVD29 = 0.15'
MLW = 0.12'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.12' – 0.78' = -0.66'
$MLW_{NGVD29\ 100}$ = -0.66' – 0.15' = -0.81'
$NGVD29_{100}$ = -0.81' – 8.25' = -9.06'

Table G-19. St. Lucie River Tributary 1

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300764	St Lucie – Trib 1	8.0	-5.9	43.0	75.0
300710	St Lucie – Trib 1	8.0	-5.9	43.0	75.0
300777	St Lucie – Trib 1	8.0	-6.0	118.0	150.0
300778*	St Lucie – Trib 1	8.25[4]	-9.06[4]	117.0	150.0

1. Best professional judgment
2. USGS
3. Calculated from depth, assumed side slope of 2.0 and top width
4. DOQQ
5. 1883 U.S. Coast and Geodetic Survey

St. Lucie – Tributary 2

The tributaries used DOQQ data. The spatial extent of tributary was refined using the DOQQ. The bottom elevations were estimated from the USGS 5 foot contour lines. * denotes a shunt connection with the estuary, modeled using the lake package. Spatial location was compared with the GLO plat maps and it is assumed that the DOQQs provide a more realistic representation of spatial location. An 1883 depth sounding of 9.0 ft was used at segment 300778. To convert this to the vertical datum NGVD29:

NOAA Station 8722371
NGVD29 = 0.15'
MLW = 0.12'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.12' – 0.78' = -0.66'
$MLW_{NGVD29\ 100}$ = -0.66' – 0.15' = -0.81'
$NGVD29_{100}$ = -0.81' – 9.0' = -9.81'

Table G-20. St. Lucie River Tributary 2

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[3]	Top Width[4]
300708	St Lucie – Trib 2	8.0[1]	-5.8[2]	118.0	150.0
300709	St Lucie – Trib 2	8.0[1]	-5.9[2]	118.0	150.0
300707*	St Lucie – Trib 2	9.0[4]	-9.81[4]	114.0	150.0

1. Best professional judgment
2. USGS
3. Calculated from depth, assumed side slope of 2.0 and top width
4. DOQQ
5. 1883 U.S. Coast and Geodetic Survey

South Fork

Spatial location was derived from GLO plat maps (Figure G-1). The bottom elevations were estimated from the USGS 5 foot contour lines. * denotes a shunt connection with the estuary, modeled using the lake package.

Table G-21. St. Lucie River South Fork

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300639	St Lucie South Fork	5.0	1.5	80.0	100.0
300640	St Lucie South Fork	5.0	1.0	80.0	100.0
300641	St Lucie South Fork	5.0	0.5	80.0	100.0
300642	St Lucie South Fork	5.0	0.0	80.0	100.0
300765	St Lucie South Fork	5.0	-1.0	80.0	100.0
300766	St Lucie South Fork	5.0	-2.0	80.0	100.0
300771	St Lucie South Fork	5.0	-3.0	80.0	100.0
300772	St Lucie South Fork	5.0	-4.0	80.0	100.0
300770	St Lucie South Fork	5.0	-5.0	80.0	100.0
300768*	St Lucie South Fork	5.0	-5.5	80.0	100.0

1. Best professional judgment
2. USGS Contours
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Estimated from GLO plat maps

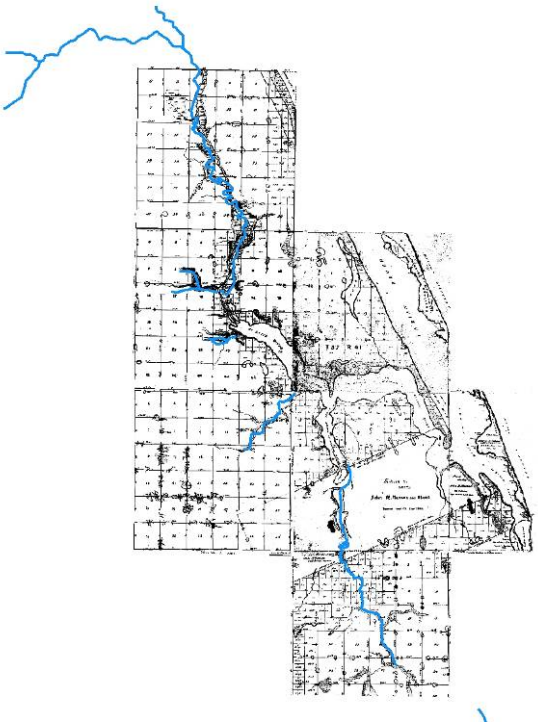


Figure G-1. St. Lucie River and estuary, GLO Survey

St. Lucie Estuary Bathymetry

An 1883 Coast and Geodetic Survey sounding map was used to construct a bathymetric surface. The datum used in the map represented mean low water 1883. To convert to NGVD 1929, the sea level rise was estimated at National Ocean Service station 8722371, Sewall Point St Lucie River, FL. The 100 year rise in mean sea level is estimated to be 0.78 ft. Since the soundings on the 1883 map represent depth below mean low water, the sounding value needs to be converted to NGVD 29:

NOAA Station 8722371
NGVD29 = 0.15'
MLW = 0.12'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.12' – 0.78' = -0.66'
$MLW_{NGVD29\ 100}$ = -0.66' – 0.15' = -0.81'
$NGVD29_{100}$ = -0.81' – sounding

A TIN was constructed of the estuary using sounding data and a historic bounding polygon of the estuary (located in directory \\dcluster1\oom\nsrsm\data\gis\NsmRiv\StLucie\Historical). Stage-volume and stage-area relationships were computed from the derived surface.

Stage-Area Relationship

-21.81	0.00
-21.00	18910.42
-20.00	86692.25
-19.00	205203.60
-18.00	409421.95
-17.00	828965.90
-16.00	1599259.91
-15.00	3281520.21
-14.00	5841307.93
-13.00	15440004.78
-12.00	51141816.87
-11.00	77069509.70
-10.00	111012395.04
-9.00	137772164.76
-7.00	183640538.27
-6.00	203951481.06
-5.00	222128726.30
-4.00	239662899.27
-3.00	255117706.89
-2.00	262749982.11
-1.00	263580714.39
0.00	263580714.39
1.00	263580714.39
3.00	263580714.39
4.00	263580714.39
5.00	263580714.39
6.00	263580714.39

Stage-Volume Relationship

-21.81	0.00
-21.00	5105.81
-20.00	54882.01
-19.00	198460.22
-18.00	488203.85
-17.00	1089535.06
-16.00	2253597.97
-15.00	4646292.65
-14.00	9120728.69
-13.00	19297540.04
-12.00	52240378.49
-11.00	116427175.01
-10.00	210606165.22
-9.00	335643506.55
-7.00	656124268.25
-6.00	850193509.42
-5.00	1063357913.10
-4.00	1294462599.75
-3.00	1542445893.47
-2.00	1802046464.74
-1.00	2065510985.22
0.00	2329091699.60
1.00	2592672413.99
3.00	3119833842.77
4.00	3383414557.15
5.00	3646995271.54
6.00	3910575985.93

CALOOSAHATCHEE RIVER DIMENSIONS

Caloosahatchee River

The Caloosahatchee River feature class is a composite data set from 1879[1] and 1887[2] surveys conducted by the U.S. Army. Copies of reports and maps were obtained from National Archives and Records Administration[3]. The 1887 survey is much more detailed, but reflects improvements made in the early 1880's. The improvements were in the eastern sections of the river connecting it to Lake Okeechobee. The 1879 surveys were used for the eastern sections of the Caloosahatchee River. Both surveys provided detailed information on the width, depth, location and vertical datum.

Elevations from the survey of 1879 are referenced above mean low tide at Fort Meyers. Elevations from the survey of 1887 are referenced to mean low water of the Gulf of Mexico. Since the 1887 survey was closed on the benchmark at Ft Myers from the 1879 survey, it is assumed that the reference to mean low of Gulf of Mexico refers to the mean low water at Ft. Meyers. To convert 1879 datum to the NGVD29 used by the NSM:

NOAA Station 8725520
NGVD29 = -0.13'
MLW = 0.15'
100 yr Sea level rise = 0.75'

MLW_{100} = 0.15' – 0.75' = -0.60'
$MLW_{NGVD29\ 100}$ = -0.60' – -0.13' = -0.47'
$NGVD29_{100}$ = MLW_{1879} - 0.47'

1. Report of the Chief of Engineers for 1879, Examination of Caloosahatchee River, Florida. Survey was conducted during March and April 1879. Note: the maps from the report used tracings from the government land survey at the land office in Gainesville.
2. Report of the Chief of Engineers for 1888, Survey of Caloosahatchee River, Florida. Survey was conducted during March, April and May of 1887.
3. National Archives and Records Administration (NARA). Records from the Office of the Chief of Engineers are in record group 77 (RG 77) and special lists 26 and 29 (SLs 26 and 29).

Table G-22. Caloosahatchee River

Location	Sounding 1879	Width 1879	Bottom Elev 1887[2]	Width 1887
1.5 miles east of Sugar Berry Hummock (SBH)	10" to 20"	NA		
SBH	5' to 8'	15'		12'
2 miles west of SBH (boundary separating section 25 and 30)	5' to 7'		10.36	21.76
Thence for 2 miles to boundary separating section 26 and 27	7'	40'	8.98	36'
Thence for 1 mile to boundary separating section 27 and 28	2' to 7'	40'	6.53	36'
Section 28	4' to 6'	5280'	-0.47	6155'
Thence to ½ mile	10" to 20"	70' to 80'	4.83	1129'
Thence 1000'		30'	4.83	27'
Thence 1¼ miles	2' to 5'	250'	5.13	225'
Thence 1 mile	2.5' to 4'	½ to 3/4 mi	4.53	2970'
Thence 1.5 miles	2.5' to 5'	800'	0.9	550'
Ft. Thompson Rapids to 4800'. There is a 2.5' fall for this length	4.5' to 8.5'	35' to 105'	-1.57	58'
Thence to west bound of range 29	6.9'	50' to 85'	-5.01	
Thence to west bound of range 28	8.8'	85' to 130'	-10.22	
Thence to west bound of range 27	11.1'	120' to 250'	-10.79	
Thence to west bound of range 26	12.7'	200' to 400'	-12.93	

1. Calculated from the average depth and adjusted to NGVD29
2. Adjusted for NGVD29

Table G-23. Caloosahatchee River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300057	Caloosahatchee Tributary	1.25	16.81	5.0	10.0
300063	Caloosahatchee Tributary	1.25	16.81	5.0	10.0
300067	Caloosahatchee Tributary	1.25	16.81	5.0	10.0
300068	Caloosahatchee Tributary	1.25	17.13	5.0	10.0
300077	Caloosahatchee Tributary	1.25	17.03	5.0	10.0
300078	Caloosahatchee Tributary	1.25	17.03	5.0	10.0
300079	Caloosahatchee Tributary	1.25	16.68	5.0	10.0
300084	Caloosahatchee Tributary	1.25	17.03	5.0	10.0
300086	Caloosahatchee Tributary	1.25	17.03	5.0	10.0
300087	Caloosahatchee Tributary	1.25	17.03	5.0	10.0
300056	Caloosahatchee	1.25	16.81	5.0	10.0
300061	Caloosahatchee	1.25	16.81	5.0	10.0
300064	Caloosahatchee	1.25	17.13	5.0	10.0
300066	Caloosahatchee	1.25	16.80	5.0	10.0
300076	Caloosahatchee	1.25	16.68	5.0	10.0
300080	Caloosahatchee	6.50	11.06	-11.0	15.0
300081	Caloosahatchee	6.00	11.56	-4.0	20.0
300074	Caloosahatchee	6.00	11.27	-4.0	20.0
300082	Caloosahatchee	7.00	9.70	12.0	40.0
300083	Caloosahatchee	7.00	8.46	12.0	40.0
300175	Caloosahatchee	4.50	1.42	22.0	40.0
300075	Lake Flirt	5.00	-0.50	5260.0	5280.0
300065	Lake Flirt	1.25	3.19	70.0	75.0
300062	Lake Flirt	2.00	2.44	22.0	30.0
300172	Lake Flirt	3.50	0.94	236.0	250.0
300173	Lake Flirt	3.25	1.63	3287.0	3300.0
300085	Lake Flirt	3.25	1.63	3287.0	3300.0
300095	Lake Flirt	3.75	1.34	785.0	800.0
300096	Lake Flirt	3.75	6.76	785.0	800.0
300102	Ft. Thompson Rapids	3.75	6.76	785.0	800.0
300100	Caloosahatchee	7.50	4.47	40.0	70.0
300099	Caloosahatchee	6.90	6.59	39.9	67.5
300094	Caloosahatchee	6.90	5.53	39.9	67.5
300097	Caloosahatchee	6.90	5.53	39.9	67.5
300101	Caloosahatchee	6.90	3.93	39.9	67.5
300176	Caloosahatchee	6.90	3.93	39.9	67.5
300177	Caloosahatchee	6.90	3.93	39.9	67.5
300181	Caloosahatchee	6.90	4.65	39.9	67.5
300182	Caloosahatchee	6.90	5.26	39.9	67.5
300120	Caloosahatchee	8.80	3.36	72.3	107.5
300122	Caloosahatchee	8.80	3.99	72.3	107.5
300121	Caloosahatchee	8.80	3.84	72.3	107.5
300187	Caloosahatchee	8.80	3.84	72.3	107.5
300188	Caloosahatchee	8.80	4.35	72.3	107.5
300131	Caloosahatchee	8.80	4.35	72.3	107.5
300139	Caloosahatchee	8.80	3.67	72.3	107.5
300184	Caloosahatchee	8.80	3.67	72.3	107.5
300185	Caloosahatchee	8.80	6.55	72.3	107.5
300147	Caloosahatchee	8.80	3.79	72.3	107.5
300149	Caloosahatchee	8.80	2.06	72.3	107.5
300153	Caloosahatchee	11.10	-0.79	140.6	185.0
300145	Caloosahatchee	11.10	-3.43	140.6	185.0
300192	Caloosahatchee	11.10	-3.43	140.6	185.0
300193	Caloosahatchee	11.10	-2.99	140.6	185.0
300155	Caloosahatchee	11.10	-2.34	140.6	185.0
300148	Caloosahatchee	11.10	-2.52	140.6	185.0

300198	Caloosahatchee	11.10	-5.69	140.6	185.0
300194	Caloosahatchee	11.10	-5.69	140.6	185.0
300201	Caloosahatchee	11.10	-5.98	140.6	185.0
300217	Caloosahatchee	11.10	-5.98	140.6	185.0
300200	Caloosahatchee	11.10	-5.98	140.6	185.0
300196	Caloosahatchee	11.10	-2.51	140.6	185.0
300197	Caloosahatchee	12.70	-4.11	249.2	300.0
300203	Caloosahatchee	12.70	-3.26	249.2	300.0
300220	Caloosahatchee	12.70	-4.94	249.2	300.0
300219	Caloosahatchee	12.70	-4.94	249.2	300.0
300202	Caloosahatchee	12.70	-2.69	249.2	300.0
300680	Caloosahatchee	12.70	-1.36	249.2	300.0

1. Sounding from 1879 survey
2. Subtracted 1879 sounding from historic topo
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Based on 1879 Survey

Caloosahatchee Tributaries

Caloosahatchee River tributaries were spatially derived from Corps of Engineers and Flood Control District Maps.

Table G-24. Caloosahatchee Tributaries

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]
300001	Caloosahatchee Tributary	5.0	46.45	10.50
300002	Caloosahatchee Tributary	5.0	46.45	10.50
300003	Caloosahatchee Tributary	5.0	46.04	10.50
300006	Caloosahatchee Tributary	5.0	44.24	10.50
300007	Caloosahatchee Tributary	5.0	42.02	10.50
300008	Caloosahatchee Tributary	5.0	41.20	10.50
300009	Caloosahatchee Tributary	5.0	36.66	10.50
300018	Caloosahatchee Tributary	5.0	33.29	10.50
300019	Caloosahatchee Tributary	5.0	31.62	10.50
300027	Caloosahatchee Tributary	5.0	28.72	10.50
300028	Caloosahatchee Tributary	5.0	27.59	10.50
300029	Caloosahatchee Tributary	5.0	27.59	10.50
300031	Caloosahatchee Tributary	5.0	23.95	10.50
300037	Caloosahatchee Tributary	5.0	18.52	10.50
300053	Caloosahatchee Tributary	5.0	-0.47	10.50
300055	Caloosahatchee Tributary	5.0	5.88	10.50
300047	Caloosahatchee Tributary	5.0	11.41	10.50
300073	Caloosahatchee Tributary	5.0	0.92	10.50
300046	Caloosahatchee Tributary	5.0	19.54	10.50
300051	Caloosahatchee Tributary	5.0	19.54	10.50
300054	Caloosahatchee Tributary	5.0	3.82	10.50
300060	Caloosahatchee Tributary	5.0	-0.12	10.50
300174	Caloosahatchee Tributary	5.0	-0.12	10.50
300036	Caloosahatchee Tributary	5.0	37.82	10.50
300039	Caloosahatchee Tributary	5.0	35.72	10.50
300045	Caloosahatchee Tributary	5.0	34.13	10.50
300048	Caloosahatchee Tributary	5.0	34.13	10.50
300049	Caloosahatchee Tributary	5.0	30.20	10.50
300050	Caloosahatchee Tributary	5.0	36.87	10.50
300052	Caloosahatchee Tributary	5.0	31.61	10.50

300069	Caloosahatchee Tributary	5.0	26.36	10.50
300070	Caloosahatchee Tributary	5.0	27.38	10.50
300088	Caloosahatchee Tributary	5.0	25.02	10.50
300091	Caloosahatchee Tributary	5.0	16.24	10.50
300093	Caloosahatchee Tributary	5.0	11.73	10.50
300098	Caloosahatchee Tributary	5.0	11.73	10.50
300178	Caloosahatchee Tributary	5.0	5.83	10.50
300115	Caloosahatchee Tributary	5.0	8.14	10.50
300116	Caloosahatchee Tributary	5.0	9.14	10.50
300207	Caloosahatchee Tributary	5.0	7.14	10.50
300117	Caloosahatchee Tributary	5.0	5.83	10.50
300118	Caloosahatchee Tributary	5.0	11.58	10.50
300179	Caloosahatchee Tributary	5.0	6.55	10.50
300004	Caloosahatchee Tributary	5.0	58.92	10.50
300005	Caloosahatchee Tributary	5.0	56.34	10.50
300010	Caloosahatchee Tributary	5.0	55.44	10.50
300011	Caloosahatchee Tributary	5.0	54.85	10.50
300012	Caloosahatchee Tributary	5.0	54.65	10.50
300013	Caloosahatchee Tributary	5.0	54.70	10.50
300014	Caloosahatchee Tributary	5.0	54.58	10.50
300016	Caloosahatchee Tributary	5.0	54.39	10.50
300017	Caloosahatchee Tributary	5.0	54.39	10.50
300020	Caloosahatchee Tributary	5.0	53.50	10.50
300021	Caloosahatchee Tributary	5.0	54.37	10.50
300023	Caloosahatchee Tributary	5.0	50.63	10.50
300025	Caloosahatchee Tributary	5.0	50.63	10.50
300030	Caloosahatchee Tributary	5.0	45.08	10.50
300205	Caloosahatchee Tributary	5.0	50.63	10.50
300206	Caloosahatchee Tributary	5.0	40.41	10.50
300222	Caloosahatchee Tributary	5.0	45.08	10.50
300040	Caloosahatchee Tributary	5.0	34.99	10.50
300041	Caloosahatchee Tributary	5.0	32.39	10.50
300038	Caloosahatchee Tributary	5.0	34.92	10.50
300042	Caloosahatchee Tributary	5.0	32.39	10.50
300058	Caloosahatchee Tributary	5.0	30.08	10.50
300059	Caloosahatchee Tributary	5.0	28.63	10.50
300089	Caloosahatchee Tributary	5.0	23.22	10.50
300090	Caloosahatchee Tributary	5.0	23.22	10.50
300092	Caloosahatchee Tributary	5.0	17.05	10.50
300105	Caloosahatchee Tributary	5.0	11.40	10.50
300107	Caloosahatchee Tributary	5.0	11.40	10.50
300110	Caloosahatchee Tributary	5.0	12.05	10.50
300123	Caloosahatchee Tributary	5.0	7.08	10.50
300125	Caloosahatchee Tributary	5.0	7.08	10.50
300166	Caloosahatchee Tributary	5.0	21.35	10.50
300167	Caloosahatchee Tributary	5.0	21.20	10.50
300168	Caloosahatchee Tributary	5.0	17.47	10.50
300169	Caloosahatchee Tributary	5.0	15.33	10.50
300170	Caloosahatchee Tributary	5.0	21.46	10.50
300183	Caloosahatchee Tributary	5.0	7.08	10.50
300106	Caloosahatchee Tributary	5.0	14.81	10.50
300109	Caloosahatchee Tributary	5.0	14.81	10.50
300112	Caloosahatchee Tributary	5.0	9.87	10.50
300113	Caloosahatchee Tributary	5.0	9.87	10.50
300208	Caloosahatchee Tributary	5.0	14.81	10.50

300223	Caloosahatchee Tributary	5.0	8.43	10.50
300189	Caloosahatchee Tributary	5.0	9.87	10.50
300190	Caloosahatchee Tributary	5.0	7.64	10.50
300015	Jack's Branch	5.0	40.27	10.50
300022	Jack's Branch	5.0	35.85	10.50
300032	Jack's Branch	5.0	33.15	10.50
300033	Jack's Branch	5.0	33.15	10.50
300034	Jack's Branch	5.0	30.69	10.50
300043	Jack's Branch	5.0	28.79	10.50
300044	Jack's Branch	5.0	28.79	10.50
300071	Jack's Branch	5.0	24.13	10.50
300072	Jack's Branch	5.0	22.36	10.50
300103	Jack's Branch	5.0	20.22	10.50
300104	Jack's Branch	5.0	16.04	10.50
300111	Jack's Branch	5.0	12.16	10.50
300114	Jack's Branch	5.0	9.13	10.50
300191	Jack's Branch	5.0	9.13	10.50
300144	Caloosahatchee Tributary	5.0	7.47	10.50
300146	Caloosahatchee Tributary	5.0	7.93	10.50
300150	Caloosahatchee Tributary	5.0	7.47	10.50
300152	Caloosahatchee Tributary	5.0	11.44	10.50
300154	Caloosahatchee Tributary	5.0	12.53	10.50
300158	Caloosahatchee Tributary	5.0	13.69	10.50
300161	Caloosahatchee Tributary	5.0	16.21	10.50
300186	Caloosahatchee Tributary	5.0	7.47	10.50
300126	Caloosahatchee Tributary	5.0	10.90	10.50
300127	Caloosahatchee Tributary	5.0	10.90	10.50
300132	Caloosahatchee Tributary	5.0	11.75	10.50
300133	Caloosahatchee Tributary	5.0	11.75	10.50
300135	Caloosahatchee Tributary	5.0	15.63	10.50
300214	Caloosahatchee Tributary	5.0	2.67	10.50
300159	Caloosahatchee Tributary	5.0	6.43	10.50
300160	Caloosahatchee Tributary	5.0	3.11	10.50
300164	Caloosahatchee Tributary	5.0	9.55	10.50
300165	Caloosahatchee Tributary	5.0	10.16	10.50
300119	Caloosahatchee Tributary	5.0	12.80	10.50
300124	Caloosahatchee Tributary	5.0	9.86	10.50
300128	Caloosahatchee Tributary	5.0	4.05	10.50
300129	Caloosahatchee Tributary	5.0	4.05	10.50
300137	Caloosahatchee Tributary	5.0	0.41	10.50
300199	Caloosahatchee Tributary	5.0	0.41	10.50
300130	Caloosahatchee Tributary	5.0	4.05	10.50
300134	Caloosahatchee Tributary	5.0	0.41	10.50
300195	Caloosahatchee Tributary	5.0	0.41	10.50
300210	Caloosahatchee Tributary	5.0	4.05	10.50
300141	Caloosahatchee Tributary	5.0	4.75	10.50
300143	Caloosahatchee Tributary	5.0	2.75	10.50
300151	Caloosahatchee Tributary	5.0	4.90	10.50
300212	Caloosahatchee Tributary	5.0	2.00	10.50
300138	Caloosahatchee Tributary	5.0	4.44	10.50
300218	Caloosahatchee Tributary	5.0	0.12	10.50
300215	Caloosahatchee Tributary	5.0	9.01	10.50

300156	Caloosahatchee Tributary	5.0	5.50	10.50
300157	Caloosahatchee Tributary	5.0	4.50	10.50
300162	Hickey's Creek	5.0	9.57	10.50
300171	Hickey's Creek	5.0	9.76	10.50
300204	Hickey's Creek	5.0	3.00	10.50
300221	Hickey's Creek	5.0	3.59	10.50
300142	Caloosahatchee Tributary	5.0	2.76	10.50

1. Assumed depth of 5.0'
2. Subtracted depth from historic topo
3. Assumed 10.5 bottom width

KISSIMMEE RIVER DIMENSIONS

Kissimmee River segments from Lake Kissimmee to Pool D were spatially derived from pre-channelization vegetation developed by Kissimmee River Division using the open water classification. The centerline below pool D was digitized from 1909-11 surveys (USCOE, 1909) Depths were derived from grids developed from LIDAR data and verified against observed depths recorded in early 1900s surveys of the Kissimmee River conducted in "compliance with the provisions of the river and harbor act" (US House of Representatives Doc. No. 176, 1902).

Table G-25. Kissimmee River

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[4]
300414	Kissimmee River	10.0	37.90	60.0	100.0
300415	Kissimmee River	10.0	37.82	60.0	100.0
300416	Kissimmee River	10.0	37.79	60.0	100.0
300417	Kissimmee River	10.0	37.65	60.0	100.0
300418	Kissimmee River	10.0	37.14	60.0	100.0
300419	Kissimmee River	10.0	37.10	60.0	100.0
300420	Kissimmee River	10.0	37.01	60.0	100.0
300517	Kissimmee River	10.0	37.01	60.0	100.0
300518	Kissimmee River	10.0	37.00	60.0	100.0
300519	Kissimmee River	10.0	36.49	60.0	100.0
300520	Kissimmee River	10.0	36.49	60.0	100.0
300521	Kissimmee River	10.0	36.36	60.0	100.0
300522	Kissimmee River	10.0	36.23	60.0	100.0
300523	Kissimmee River	10.0	36.12	60.0	100.0
300524	Kissimmee River	10.0	35.11	60.0	100.0
300525	Kissimmee River	10.0	34.92	60.0	100.0
300526	Kissimmee River	10.0	34.64	60.0	100.0
300527	Kissimmee River	10.0	34.25	60.0	100.0
300528	Kissimmee River	10.0	34.11	60.0	100.0
300529	Kissimmee River	10.0	34.11	60.0	100.0
300530	Kissimmee River	10.0	32.13	60.0	100.0
300531	Kissimmee River	10.0	32.13	60.0	100.0
300532	Kissimmee River	10.0	32.07	60.0	100.0
300533	Kissimmee River	10.0	31.41	60.0	100.0
300534	Kissimmee River	10.0	30.92	60.0	100.0
300535	Kissimmee River	10.0	30.82	60.0	100.0
300536	Kissimmee River	10.0	30.72	60.0	100.0
300537	Kissimmee River	10.0	30.72	60.0	100.0
300538	Kissimmee River	10.0	29.46	60.0	100.0
300539	Kissimmee River	10.0	29.03	60.0	100.0
300540	Kissimmee River	10.0	28.72	60.0	100.0
300541	Kissimmee River	10.0	28.70	60.0	100.0
300542	Kissimmee River	10.0	26.70	60.0	100.0
300543	Kissimmee River	10.0	26.53	60.0	100.0
300544	Kissimmee River	10.0	25.67	60.0	100.0
300545	Kissimmee River	10.0	24.54	60.0	100.0
300546	Kissimmee River	10.0	24.11	60.0	100.0
300547	Kissimmee River	10.0	23.84	60.0	100.0
300548	Kissimmee River	10.0	23.44	60.0	100.0
300549	Kissimmee River	10.0	23.35	60.0	100.0
300550	Kissimmee River	10.0	22.75	60.0	100.0

300551	Kissimmee River	10.0	22.69	60.0	100.0
300552	Kissimmee River	10.0	22.59	60.0	100.0
300553	Kissimmee River	10.0	22.44	60.0	100.0
300554	Kissimmee River	10.0	21.71	60.0	100.0
300555	Kissimmee River	10.0	19.78	60.0	100.0
300556	Kissimmee River	10.0	19.46	60.0	100.0
300557	Kissimmee River	10.0	18.78	60.0	100.0
300558	Kissimmee River	10.0	18.65	60.0	100.0
300559	Kissimmee River	10.0	18.59	60.0	100.0
300560	Kissimmee River	10.0	18.08	60.0	100.0
300561	Kissimmee River	10.0	17.70	60.0	100.0
300562	Kissimmee River	10.0	16.41	60.0	100.0
300563	Kissimmee River	10.0	16.30	60.0	100.0
300564	Kissimmee River	10.0	16.28	60.0	100.0
300565	Kissimmee River	10.0	15.90	60.0	100.0
300566	Kissimmee River	10.0	15.89	60.0	100.0
300567	Kissimmee River	10.0	15.87	60.0	100.0
300568	Kissimmee River	10.0	15.68	60.0	100.0
300569	Kissimmee River	10.0	15.59	60.0	100.0
300570	Kissimmee River	10.0	15.20	60.0	100.0
300571	Kissimmee River	10.0	14.21	60.0	100.0
300572	Kissimmee River	10.0	14.21	60.0	100.0
300573	Kissimmee River	10.0	14.16	60.0	100.0
300574	Kissimmee River	10.0	13.47	60.0	100.0
300575	Kissimmee River	10.0	8.77	60.0	100.0
300576	Kissimmee River	10.0	8.77	60.0	100.0
300577	Kissimmee River	10.0	7.59	60.0	100.0
300578	Kissimmee River	13.0	6.50	48.0	100.0
300579	Kissimmee River	13.0	4.44	48.0	100.0
300580	Kissimmee River	13.0	4.44	48.0	100.0
300581	Kissimmee River	13.0	4.35	48.0	100.0
300582	Kissimmee River	18.0	2.57	28.0	100.0
300583	Kissimmee River	18.0	2.47	28.0	100.0
300584	Kissimmee River	20.0	-0.59	20.0	100.0

1. Best professional judgment using LIDAR from Pools A-D
2. LIDAR adjusted for dredging and spoil mounds
3. Calculated from depth, assumed side slope of 2.0 and top width
4. Best professional judgment

ISTOKPOGA CREEK DIMENSIONS

The centerline for Istokpoga Creek was digitized from 1955 COE drawings.

Table G-26. Istokpoga Creek

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[1]
300728	Istokpoga Creek	2.0	41.17	42.0	50.0
300730	Istokpoga Creek	2.0	39.50	42.0	50.0
300731	Istokpoga Creek	2.0	38.34	42.0	50.0
300732	Istokpoga Creek	2.0	36.95	42.0	50.0
300734	Istokpoga Creek	2.0	32.94	42.0	50.0
300735	Istokpoga Creek	2.0	32.31	42.0	50.0

1. Best professional judgment
2. ?
3. Calculated from depth, assumed side slope of 2.0 and top width

TAYLOR CREEK DIMENSIONS

The centerline for Taylor Creek was digitized from a USCOE drainage map (1909)

Table G-27. Taylor Creek

NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[1]
300648	Taylor Creek	4.0	47.03	59.0	75.0
300649	Taylor Creek	4.0	37.90	59.0	75.0
300650	Taylor Creek	4.0	30.66	59.0	75.0
300651	Taylor Creek	4.0	30.39	59.0	75.0
300652	Taylor Creek	4.0	29.00	59.0	75.0
300653	Taylor Creek	4.0	28.50	59.0	75.0
300654	Taylor Creek	4.0	28.20	59.0	75.0
300655	Taylor Creek	4.0	28.00	59.0	75.0
300656	Taylor Creek	4.0	27.75	59.0	75.0
300657	Taylor Creek	4.0	27.50	59.0	75.0
300658	Taylor Creek	4.0	24.74	59.0	75.0
300659	Taylor Creek	4.0	21.44	59.0	75.0
300660	Taylor Creek	4.0	14.93	59.0	75.0
300661	Taylor Creek	4.0	13.07	59.0	75.0
300622	Taylor Creek	4.0	12.00	59.0	75.0
300663	Taylor Creek	4.0	10.24	59.0	75.0

1. Best professional judgment
2. Estimated from topography
3. Calculated from depth, assumed side slope of 2.0 and top width

FISHEATING CREEK DIMENSIONS

The centerline of Fisheating Creek was spatially derived from SFWMD hydrography.

Table G-28. Fisheating Creek

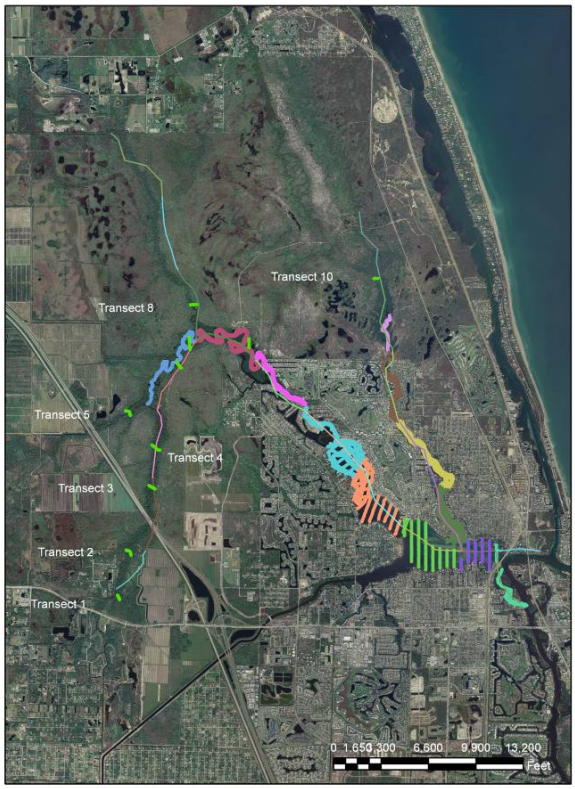
NsRiv ID	Location	Depth[1]	Bottom Elev[2]	Bottom Width[3]	Top Width[1]
300386	Fisheating Creek	3.0	46.26	88.0	100.0
300387	Fisheating Creek	3.0	44.71	88.0	100.0
300388	Fisheating Creek	3.0	42.92	88.0	100.0
300389	Fisheating Creek	3.0	42.06	88.0	100.0
300390	Fisheating Creek	3.0	41.22	88.0	100.0
300391	Fisheating Creek	3.0	40.34	88.0	100.0
300392	Fisheating Creek	3.0	38.93	88.0	100.0
300393	Fisheating Creek	3.0	38.05	88.0	100.0
300394	Fisheating Creek	3.0	37.45	88.0	100.0
300395	Fisheating Creek	3.0	36.75	88.0	100.0
300396	Fisheating Creek	3.0	36.29	88.0	100.0
300397	Fisheating Creek	3.0	35.39	88.0	100.0
300398	Fisheating Creek	3.0	34.09	88.0	100.0
300399	Fisheating Creek	3.0	31.64	88.0	100.0
300400	Fisheating Creek	3.0	30.23	88.0	100.0
300401	Fisheating Creek	3.0	28.75	88.0	100.0
300402	Fisheating Creek	3.0	28.25	88.0	100.0
300403	Fisheating Creek	3.0	27.76	88.0	100.0
300404	Fisheating Creek	3.0	26.62	88.0	100.0
300405	Fisheating Creek	3.0	24.43	88.0	100.0
300406	Fisheating Creek	3.0	22.35	88.0	100.0
300407	Fisheating Creek	3.0	20.10	88.0	100.0
300408	Fisheating Creek	3.0	19.55	88.0	100.0
300409	Fisheating Creek	3.0	18.74	88.0	100.0
300410	Fisheating Creek	3.0	18.29	88.0	100.0
300411	Fisheating Creek	3.0	17.75	88.0	100.0
300412	Fisheating Creek	3.0	15.50	88.0	100.0
300413	Fisheating Creek	3.0	14.38	88.0	100.0

1. Best professional judgment
2. Estimated from topography
3. Calculated from depth, assumed side slope of 2.0 and top width

LOXAHATCHEE RIVER (AKA JUPITER RIVER) DIMENSIONS

Recent survey and bathymetric data verified against historical survey data, where available, was used for Loxahatchee River network development.

Survey data from SFWMD survey crews recorded primarily during 2003 was used for Northwest Fork river bed elevations (Figure G-2, Table G-29). To account for dredging, 2 feet was added to the bottom elevation of each transect. Transects T8 and T10 are taken from Kitching Creek and the North Fork, respectively. It is assumed that there is no dredging at this part of the river. For both transects, the survey was stopped at the edge of water, therefore the bottom of the river may be slightly deeper.



Bathymetric data was provided by SFWMD. The data was used for river bed elevations in the Loxahatchee River (Jupiter River). To obtain a representative elevation of each network river segment, the data points were grouped spatially for each segment. An average bottom elevation was used for each spatial group and 2 feet was added to the elevation to account for dredging.

Figure G-2. SFWMD 2003 Loxahatchee River survey transects

Table G-29. Adjusted elevations for transects of Loxahatchee River Northwest Fork

Transect	Bottom Elev	Adjusted Bottom Elev	Notes
T1	5.44	7.44	Assume 2' dredging
T2	3.07	5.07	Assume 2' dredging
T3	-9.87	-7.87	Assume 2' dredging
T4	-2.45	-0.45	Assume 2' dredging
T5	3.56	5.56	Assume 2' dredging
T8	0.77	0.77	Survey taken to edge of water
T10	5.97	5.97	Survey taken to edge of water

Table G-30. Loxahatchee River (Jupiter River)

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[13]	Top Width[14]
300292	Northwest Fork	5.0[1]	6.25[2]	80.0	100.0
300291	Northwest Fork	5.0[1]	-1.4[3]	80.0	100.0
300290	Northwest Fork	5.0[1]	-0.92[4]	80.0	100.0
300289	Northwest Fork	5.0[1]	-5.27[5]	80.0	100.0
300280	Northwest Fork	5.0[1]	-6.23[5]	130.0	150.0
300279	Northwest Fork	5.0[7]	-5.97[5]	180.0	200.0
300278	Northwest Fork	6.0[7]	-3.08[5]	476.0	500.0
300277	Northwest Fork	8.0[7]	-4.66[5]	1468.0	1500.0
300757	Northwest Fork	5.0[7]	-6.38[6]	2480.0	2500.0
300283	Kitching Creek	5.0[1]	1.27[8]	80.0	100.0
300282	Kitching Creek	5.0[1]	1.02[8]	80.0	100.0
300281	Kitching Creek	5.0[1]	0.77[9]	80.0	100.0
300288	North Fork	2.0[1]	1.65[10]	67.0	75.0
300287	North Fork	2.0[7]	1.4[11]	92.0	100.0
300286	North Fork	4.0[7]	-1.03[12]	284.0	300.0
300285	North Fork	4.0[7]	-2.6[12]	484.0	500.0
300284	North Fork	5.0[7]	-3.0[12]	580.0	600.0
300781	Southwest Fork	5.0[7]	-1.82[5]	780.0	800.0
300782	Southwest Fork	5.0[7]	-2.38[5]	780.0	800.0
300785	Lake Worth Creek	4.0[7]	-6.84[5]	284.0	300.0
300786	Lake Worth Creek	4.0[7]	-5.02[5]	284.0	300.0
300758	Jupiter River	5.0[7]	-3.19[5]	2480.0	2500.0
300670	Jupiter River	4.0[7]	-2.18[5]	1184.0	1200.0
300783	Jupiter River	3.0[7]	-4.32[5]	488.0	500.0
300784	Jupiter River	3.0[7]	-9.43[5]	488.0	500.0

1. Best professional judgment
2. Average of transects T1 and T2
3. Average of transects T2 and T3
4. Average of transects T3, T4 and T5
5. SFWMD Bathymetry data adjusted for 2 feet of dredging
6. SFWMD Bathymetry data not adjusted for dredging
7. Estimated from depth from 1884 U.S. Coast and Geodetic Survey sounding map
8. Increasing elevation of 0.25 based on elevation in segment 300281
9. Transect T8
10. 0.25 was added from the adjacent downstream segment 300287
11. Average of the bathymetry, -3.18, and transect T10 river bottom elevation, 5.97. The bathymetry represents half of the river reach and it is assumed that transect T10 is representative of the other half.
12. SFWMD Bathymetry data adjusted for 2 feet of dredging
13. Calculated from depth, assumed side slope of 2.0 and top width
14. DOQQ

Loxahatchee (Jupiter) River 1884 Coast and Geodetic Survey

The river bottom elevations in the network were compared with historic soundings from an 1884 Coast and Geodetic Survey map (Figure G-3).

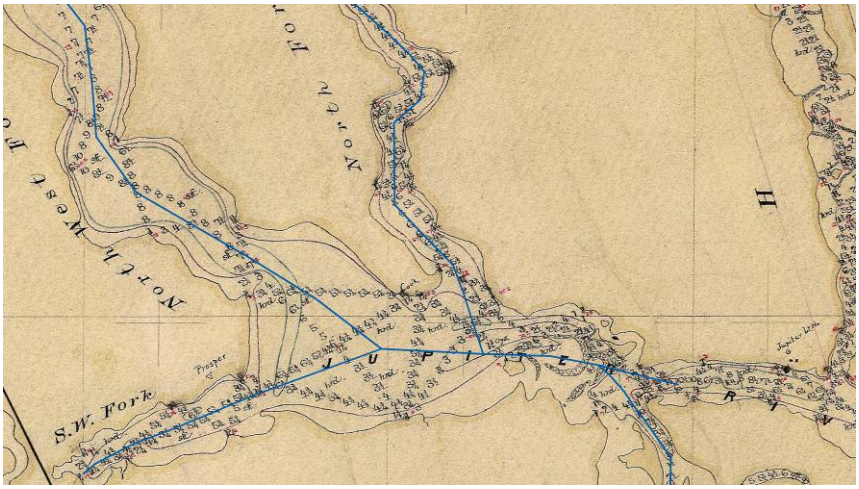


Figure G-3. 1884 U.S. Coast and Geodetic Survey of Loxahatchee (Jupiter) River

The datum used for sounding data from the 1884 Coast and Geodetic Survey is mean low water. To convert the data to vertical datum NGVD29:

NOAA Station 8722481
NGVD29 = 0.58'
MLW = 0.15'
100 yr Sea level rise = 0.78'

MLW_{100} = 0.15' – 0.78' = -0.63'
$MLW_{NGVD29\ 100}$ = -0.63' – 0.58' = -1.21'
$NGVD29_{100}$ = -1.21' – sounding

NGVD 29 for the 1884 map is -1.21 feet. The following chart illustrates a comparison using the 1884 U.S. Coast and Geodetic Survey.

Table G-31. Loxahatchee River (Jupiter River), Comparison using 1884 U.S. Coast and Geodetic Survey

NsRiv ID	Location	Bottom Elev	Bottom Width	Sounding 1884	Bottom Elev 1884	Bottom Width 1884[1]	Top Width 1884
300292	NW Fork	6.25	80.0	NA			
300291	NW Fork	-1.4	80.0	NA			
300290	NW Fork	-0.92	80.0	NA			
300289	NW Fork	-5.27	80.0	NA			
300280	NW Fork	-6.23	130.0	NA			
300279	NW Fork	-5.79	180.0	7.04	-8.25	271.8	300.0
300278	NW Fork	-3.08	476.0	5.0	-6.21	980.0	1000.0
300277	NW Fork	-4.66	1468.0	7.76	-8.97	1669.0	1700.0
300757	NW Fork	-6.38	2480.0	5.21	-6.42	2379.2	2400.0
300283	Kitching Creek	1.27	80.0	NA			
300282	Kitching Creek	1.02	80.0	NA			
300281	Kitching Creek	0.77	80.0	NA			
300288	North Fork	1.65	67.0	NA			
300287	North Fork	1.4	92.0	1.75	-2.96	153.0	160.0
300286	North Fork	-1.03	284.0	4.28	-5.49	382.9	400.0
300285	North Fork	-2.6	484.0	4.37	-5.58	482.5	500.0
300284	North Fork	-3.0	580.0	4.94	-6.15	780.2	800.0
300781	SW Fork	-1.82	780.0	4.6	-5.81	781.6	800.0
300782	SW Fork	-2.38	780.0	5.04	-6.25	779.8	800.0
300785	Lake Worth Creek	-6.84	284.0	6.25	-7.46	275.0	300.0
300786	Lake Worth Creek	-5.02	284.0	6.17	-7.38	275.3	300.0
300758	Jupiter River	-3.19	2480.0	4.13	-5.34	2183.5	2200.0
300670	Jupiter River	-2.18	1184.0	3.25	-4.46	1487.0	1500.0
300783	Jupiter River	-4.32	488.0	3.88	-5.09	590.0	600.0
300784	Jupiter River	-9.43	488.0	11.0	-12.21	547.0	600.0

1. Calculated from sounding 1884, assumed side slope of 2.0 and top width 1884

Loxahatchee (Jupiter) River Composite Data Set

A composite dataset was used for the Loxahatchee River consisting of transect data, bathymetry, DOQQ and the 1884 U.S. Coast and Geodetic Survey.

Table G-32. Loxahatchee River composite data set.

NsRiv ID	Location	Depth	Bottom Elev	Bottom Width[11]	Top Width
300292	Northwest Fork	5.0[1]	6.25[2]	80.0	100.0[10]
300291	Northwest Fork	5.0[1]	-1.4[3]	80.0	100.0[10]
300290	Northwest Fork	5.0[1]	-0.92[4]	80.0	100.0[10]
300289	Northwest Fork	5.0[1]	-5.27[5]	80.0	100.0[10]
300280	Northwest Fork	5.0[1]	-6.23[5]	130.0	150.0[10]
300279	Northwest Fork	7.04[6]	-8.25[6]	271.8	300.0[6]
300278	Northwest Fork	5.0[6]	-6.21[6]	980.0	1000.0[6]
300277	Northwest Fork	7.76[6]	-8.97[6]	1669.0	1700.0[6]
300757	Northwest Fork	5.21[6]	-6.42[6]	2379.2	2400.0[6]
300283	Kitching Creek	5.0[1]	1.27[7]	80.0	100.0[10]
300282	Kitching Creek	5.0[1]	1.02[7]	80.0	100.0[10]
300281	Kitching Creek	5.0[1]	0.77[8]	80.0	100.0[10]
300288	North Fork	2.0[1]	1.65[9]	67.0	75.0[10]
300287	North Fork	1.75[6]	-2.96[6]	153.0	160.0[6]
300286	North Fork	4.28[6]	-5.49[6]	382.9	400.0[6]
300285	North Fork	4.37[6]	-5.58[6]	482.5	500.0[6]
300284	North Fork	4.94[6]	-6.15[6]	780.2	800.0[6]
300781	Southwest Fork	4.6[6]	-5.81[6]	781.6	800.0[6]
300782	Southwest Fork	5.04[6]	-6.25[6]	779.8	800.0[6]
300785	Lake Worth Creek	6.25[6]	-7.46[6]	275.0	300.0[6]
300786	Lake Worth Creek	6.17[6]	-7.38[6]	275.3	300.0[6]
300758	Jupiter River	4.13[6]	-5.34[6]	2183.5	2200.0[6]
300670	Jupiter River	3.25[6]	-4.46[6]	1487.0	1500.0[6]
300783	Jupiter River	3.88[6]	-5.09[6]	590.0	600.0[6]
300784	Jupiter River	11.0[6]	-12.21[6]	547.0	600.0[6]

1. Best professional judgment
2. Average of transects T1 and T2
3. Average of transects T2 and T3
4. Average of transects T3, T4 and T5
5. SFWMD Bathymetry data adjusted for 2 feet of dredging
6. 1884 U.S. Coast and Geodetic Survey map
7. Increasing elevation of 0.25 based on elevation in segment 300281
8. Transect T8
9. 0.25 was added from the adjacent downstream segment 300287
10. DOQQ
11. Calculated using depth, side slope of 2 and top width