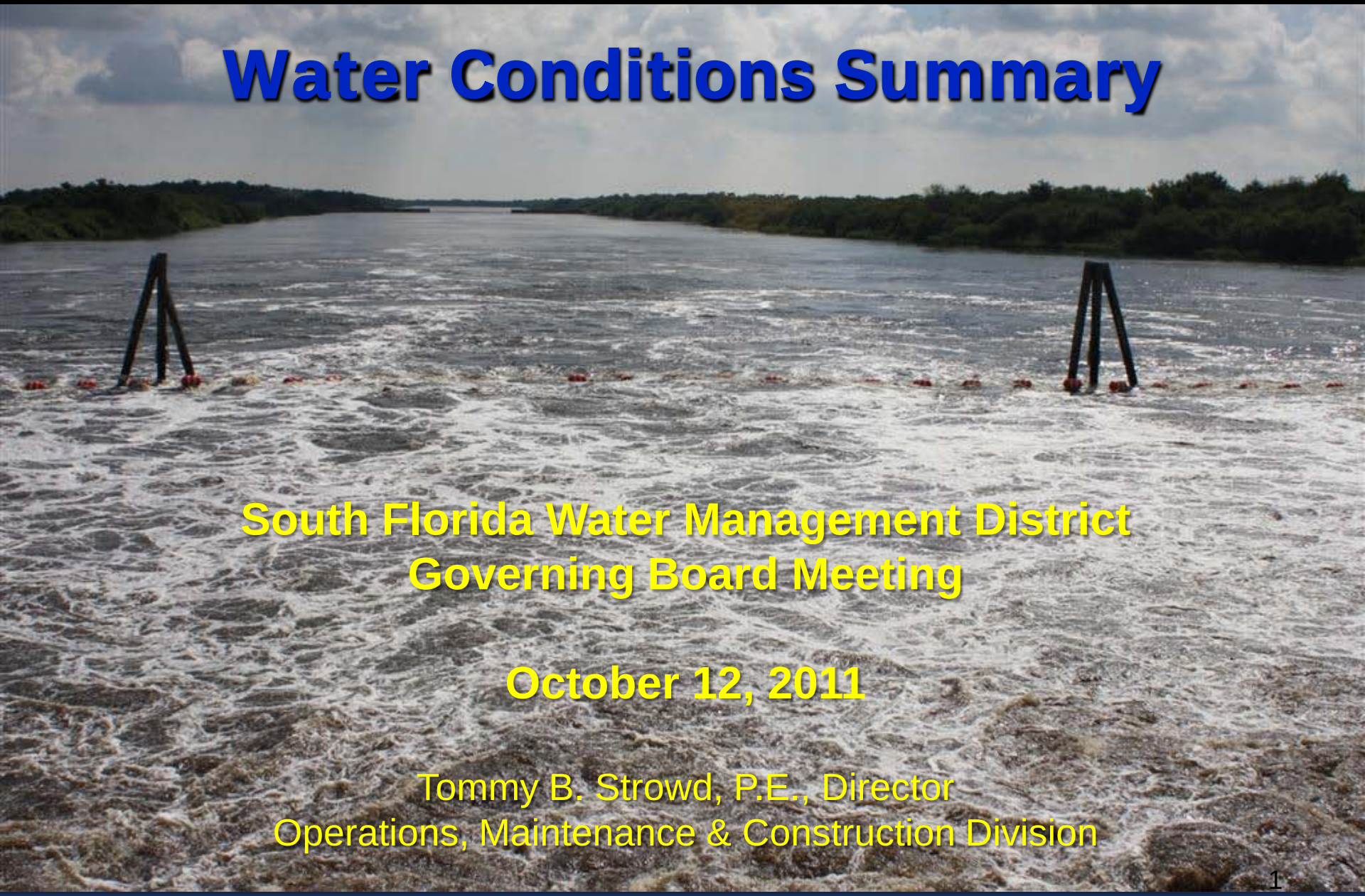
Water Conditions Summary



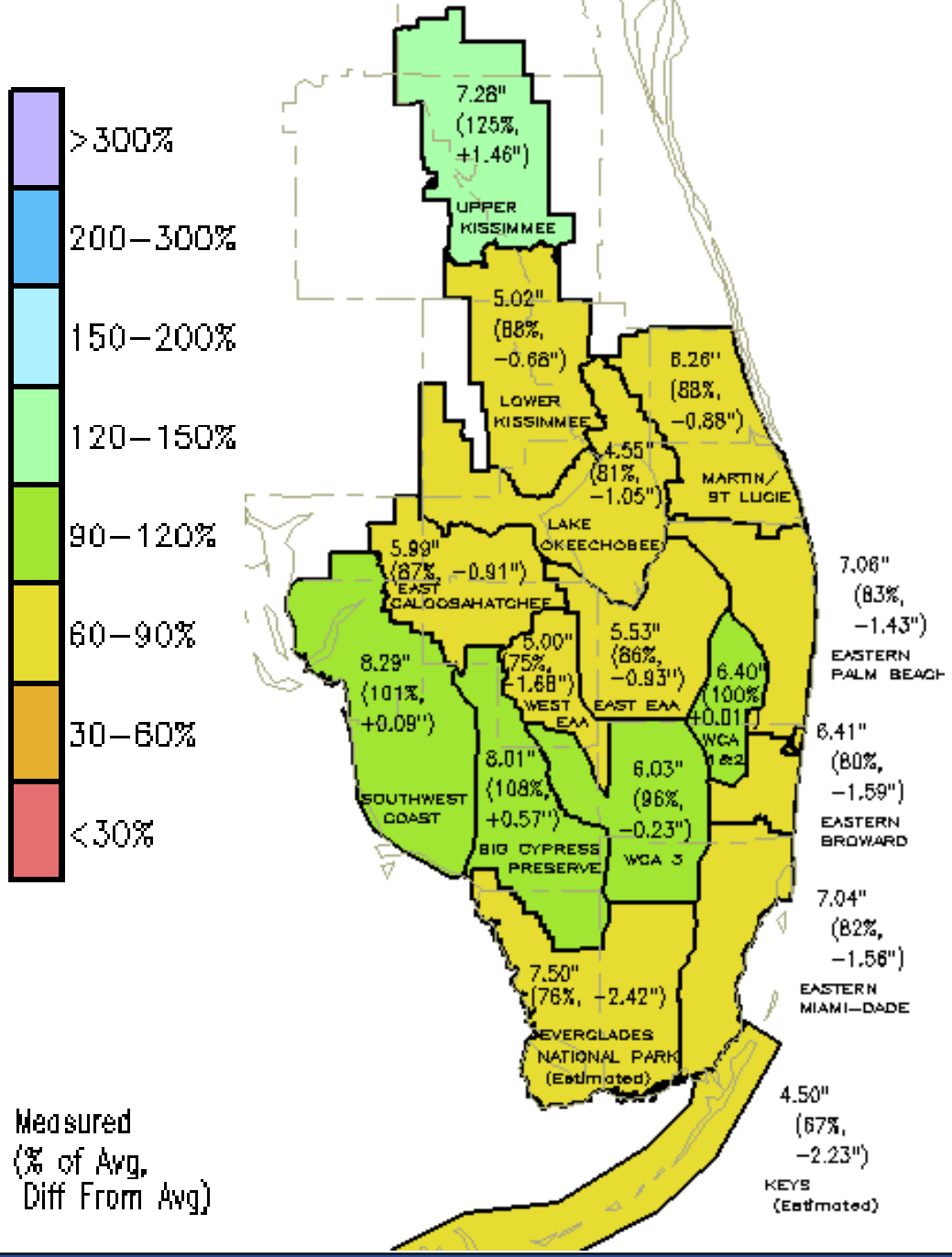
South Florida Water Management District Governing Board Meeting

October 12, 2011

Tommy B. Strowd, P.E., Director
Operations, Maintenance & Construction Division

Discharge from S-65E into Kissimmee River & Lake Okeechobee

SFWMD 2010-11
September Rainfall
Sep 2 – Oct 1

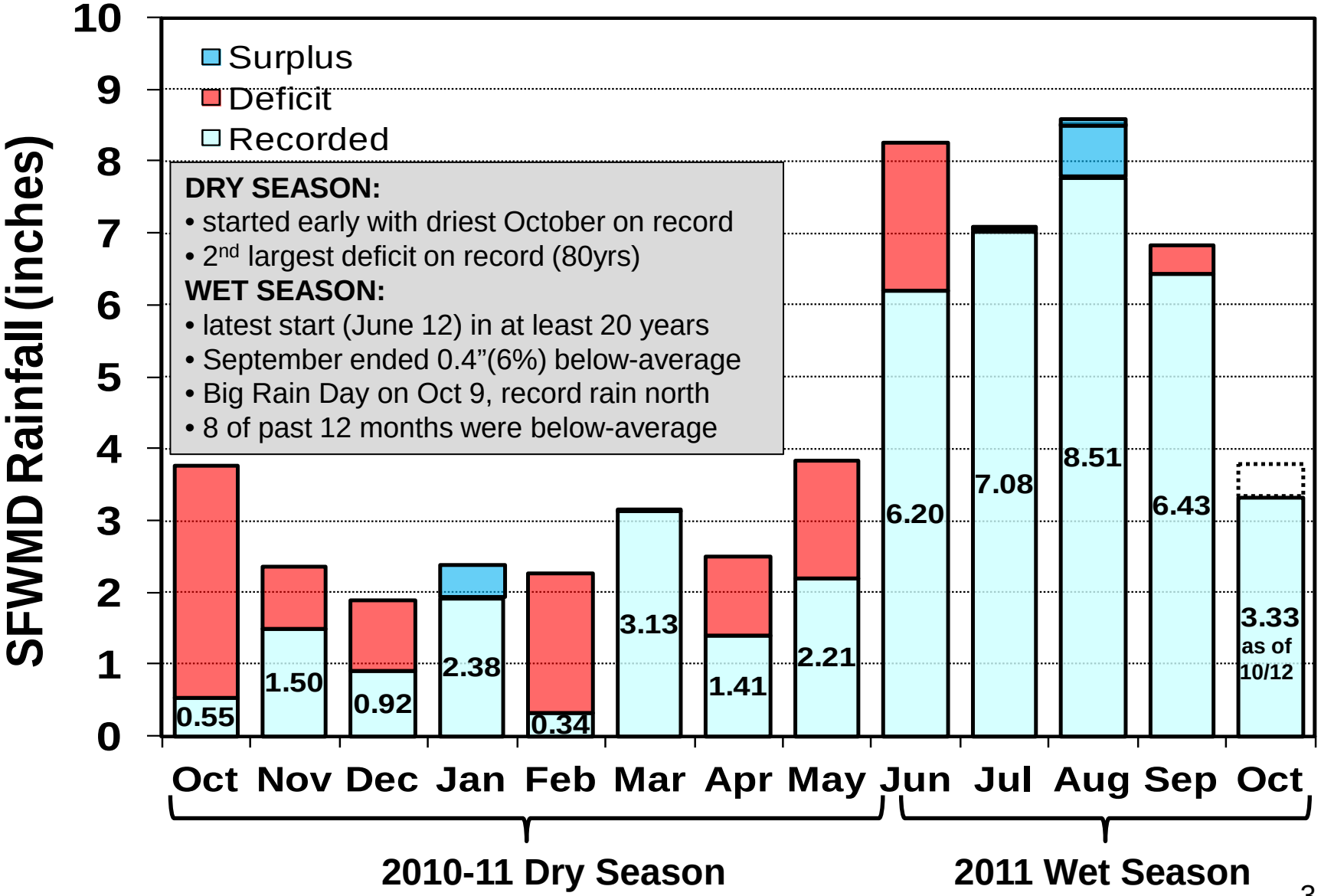


DISTRICT-WIDE: 6.43" (94% of Avg, or -0.40")

- **Near average rainfall in WCAs, Big Cypress and Southwest Coast**
- **Only the Upper Kissimmee Basin experienced above average September rainfall**
- **No rainfall from tropical events**
- **<u>No big rain days</u> (average 1" or more over the SFWMD)**

sfwmd.gov

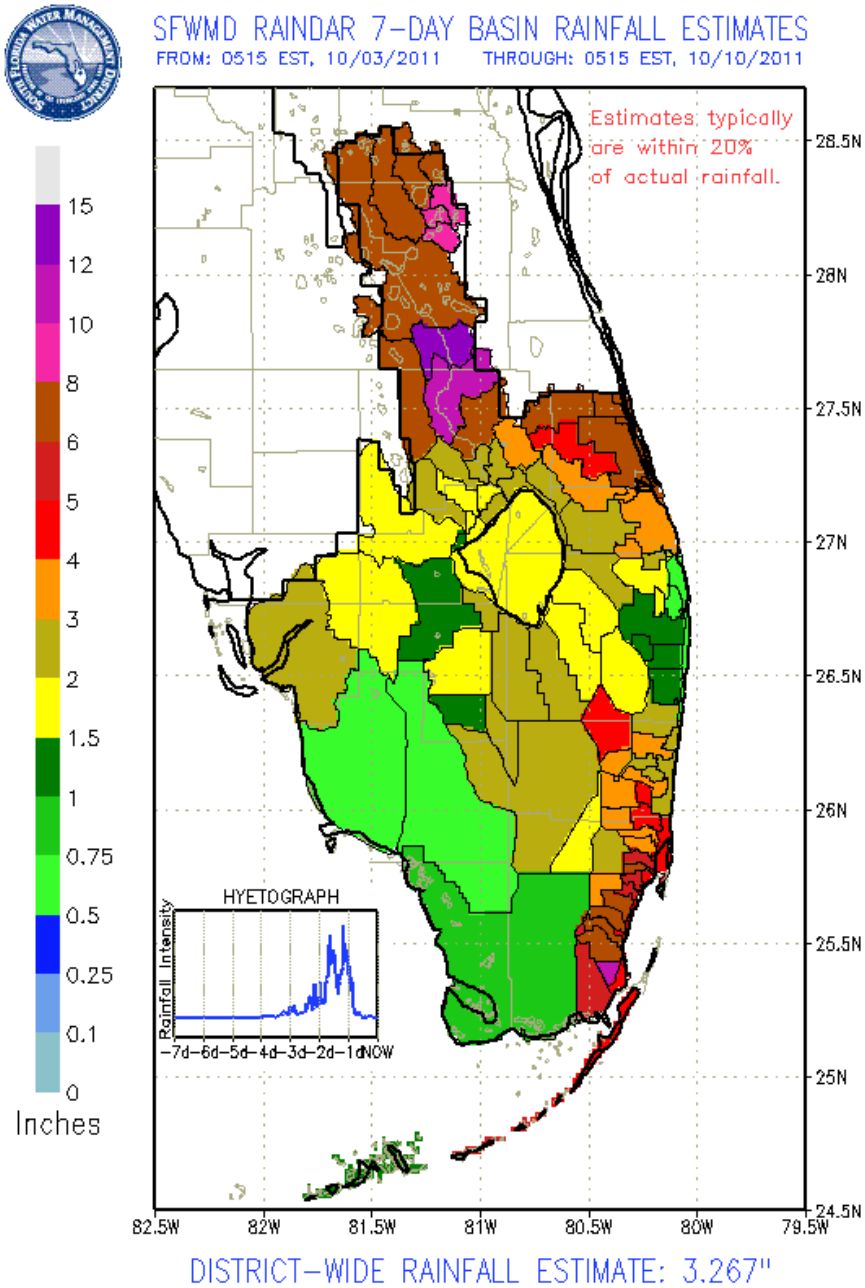
SFWMD Rainfall Distribution Comparison (Oct 2010 - Oct 2011)

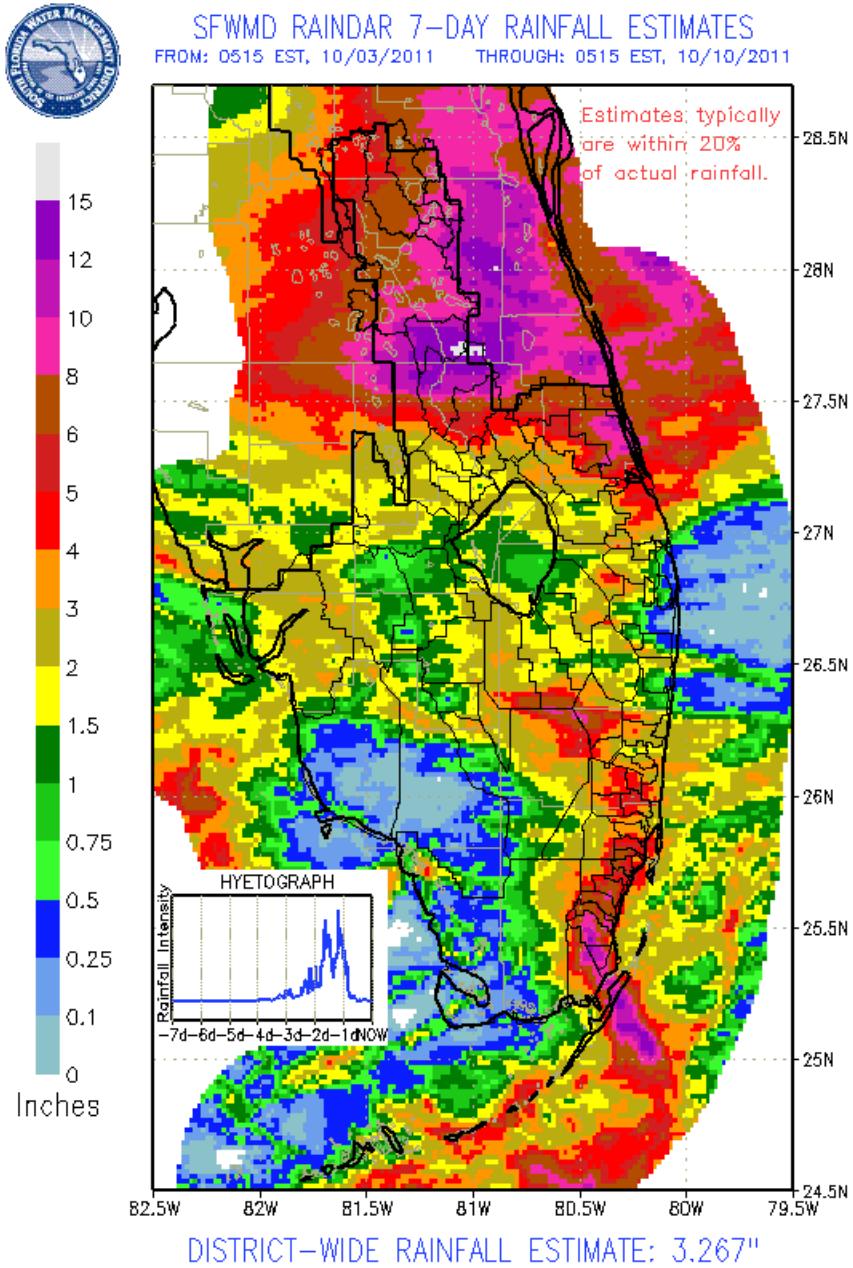


October 2011 Rain Event Factoids

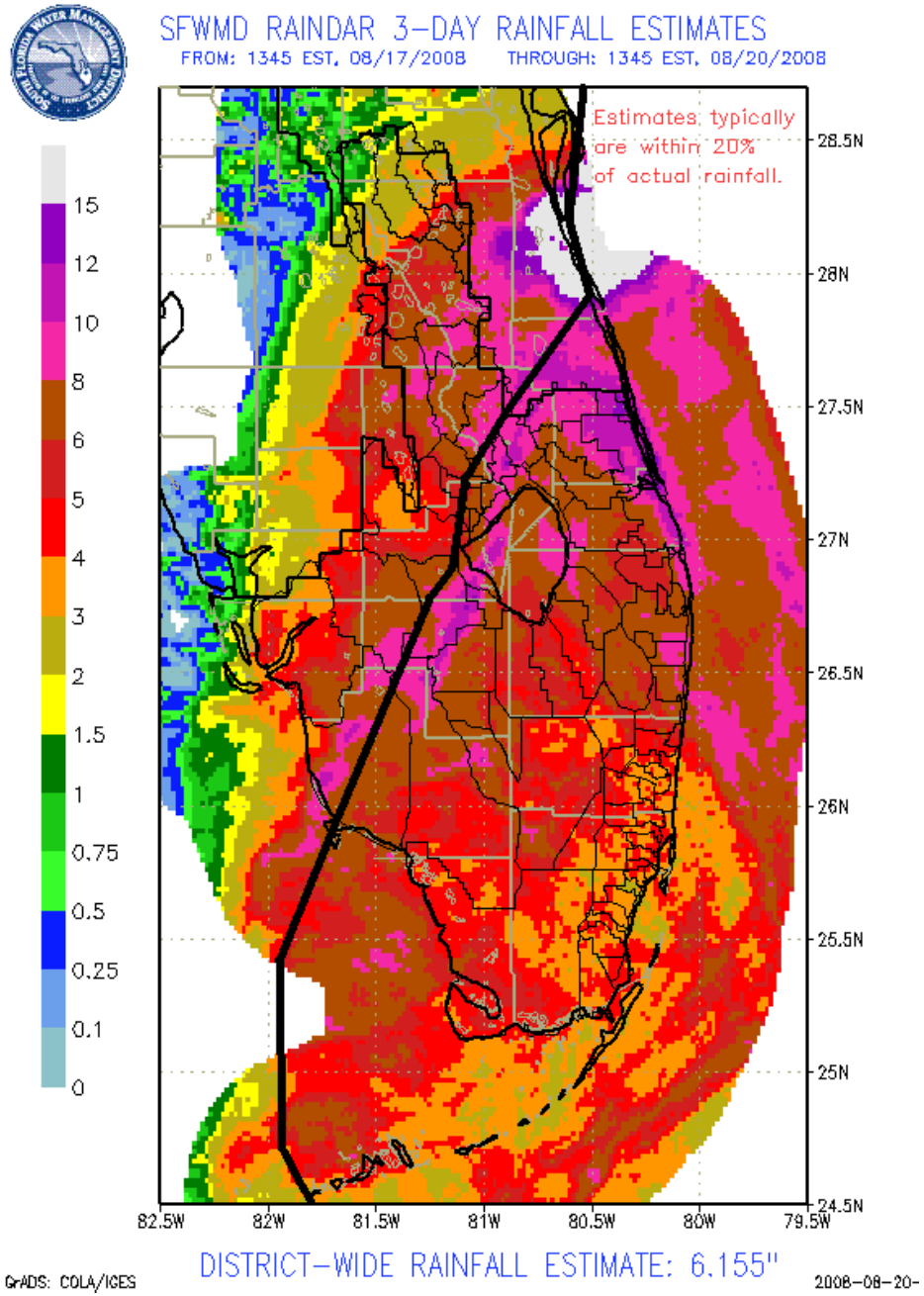
- Occurred mostly between Oct 7-9
- Widespread heavy rain with focus in the Upper and Lower Kissimmee basins & southeastern Miami-Dade County
- > 100-yr 24-hr event (Oct 9) at many gages in the vicinity of SR-60 and between S-65 and S-65A
- Maximum 1-day gage reading: 14.1” (near S-65A)
- Combined Upper & Lower Kissimmee basin 1-day rainfall was 6.05” on Oct 9 (highest in 98 years)

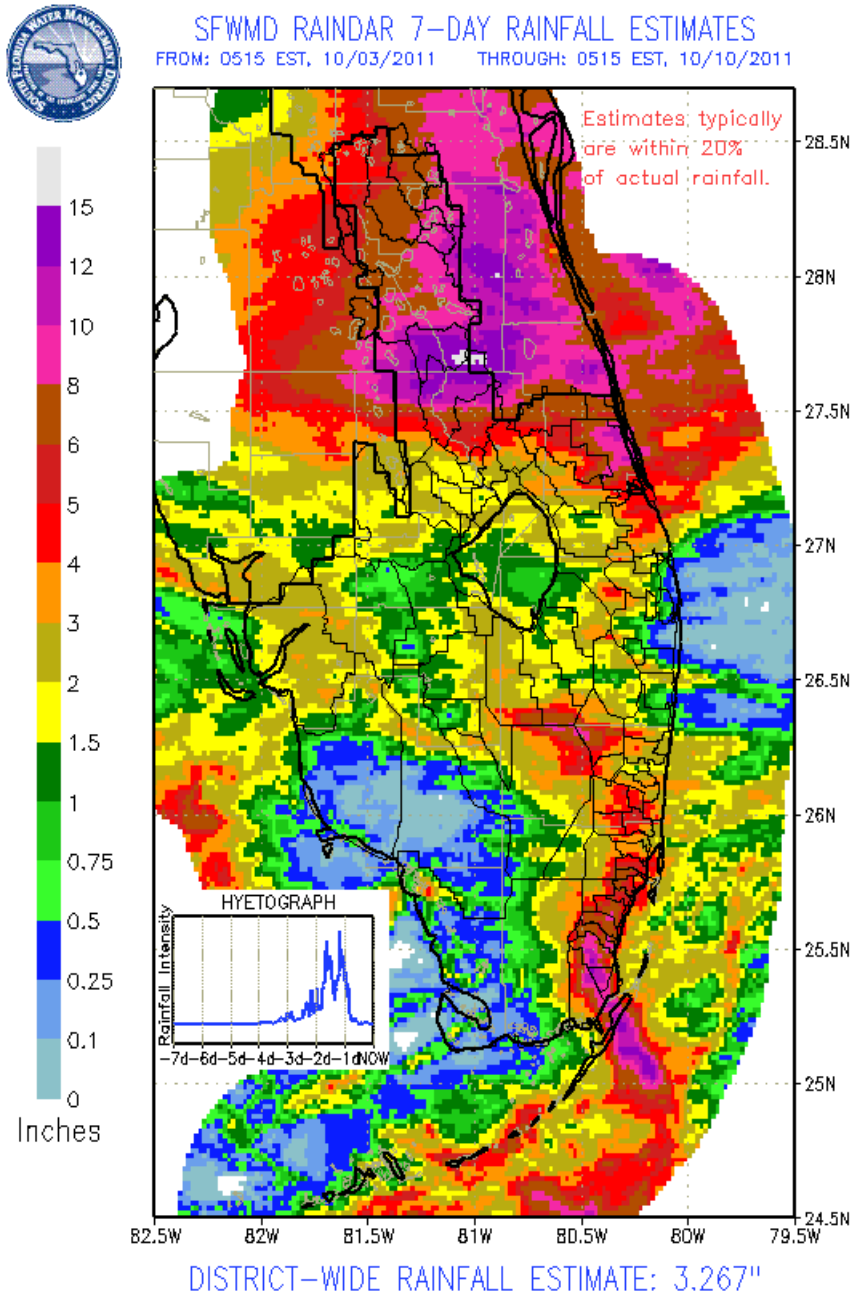
sfwmd.gov


SFWMD RAINDAR 7-DAY BASIN RAINFALL ESTIMATES
FROM: 0515 EST, 10/03/2011 THROUGH: 0515 EST, 10/10/2011
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
Inches
HYETOGRAPH
Rainfall Intensity
-7d-6d-5d-4d-3d-2d-1dNOW
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
DISTRICT-WIDE RAINFALL ESTIMATE: 3.267"

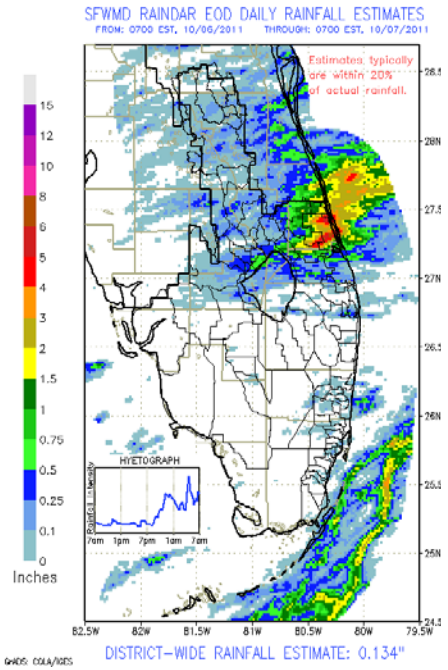

SFWMD RAINDAR 7-DAY RAINFALL ESTIMATES
FROM: 0515 EST, 10/03/2011 THROUGH: 0515 EST, 10/10/2011
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
Inches
HYETOGRAPH
Rainfall Intensity
-7d-6d-5d-4d-3d-2d-1dNOW
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
DISTRICT-WIDE RAINFALL ESTIMATE: 3.267"

sfwmd.gov

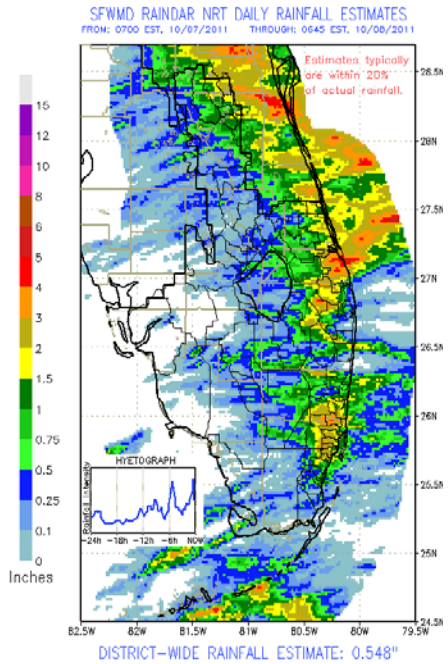

SFWMD RAINDAR 3-DAY RAINFALL ESTIMATES
FROM: 1345 EST, 08/17/2008 THROUGH: 1345 EST, 08/20/2008
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
GrADS: COLA/IGES
DISTRICT-WIDE RAINFALL ESTIMATE: 6.155"
2008-08-20-


SFWMD RAINDAR 7-DAY RAINFALL ESTIMATES
FROM: 0515 EST, 10/03/2011 THROUGH: 0515 EST, 10/10/2011
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
Inches
HYETOGRAPH
Rainfall Intensity
-7d -6d -5d -4d -3d -2d -1d NOW
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
DISTRICT-WIDE RAINFALL ESTIMATE: 3.267"

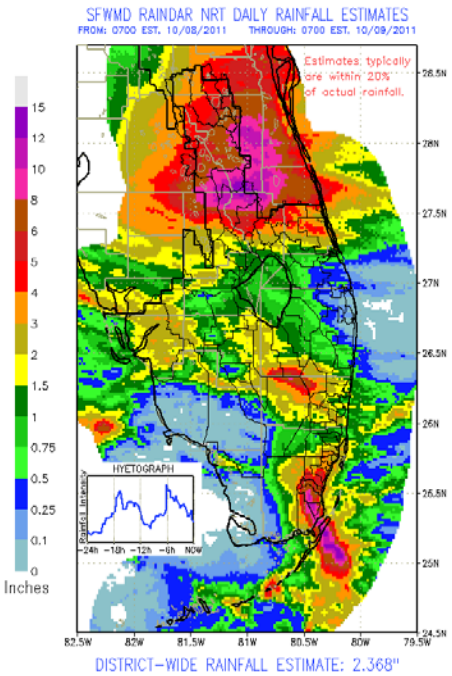
Daily Progression of Rainfall



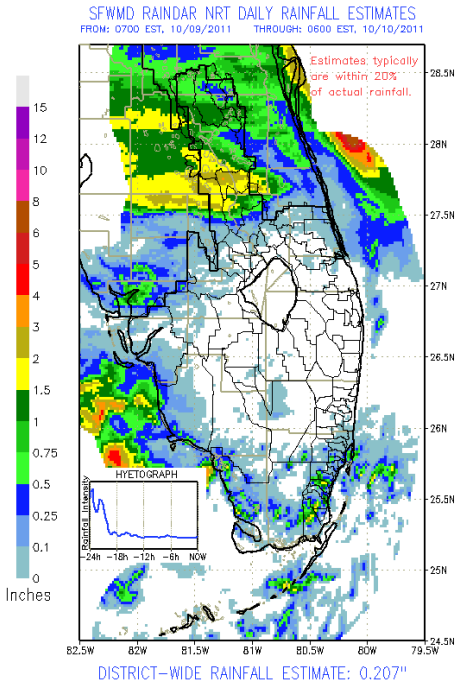
Thursday



Friday

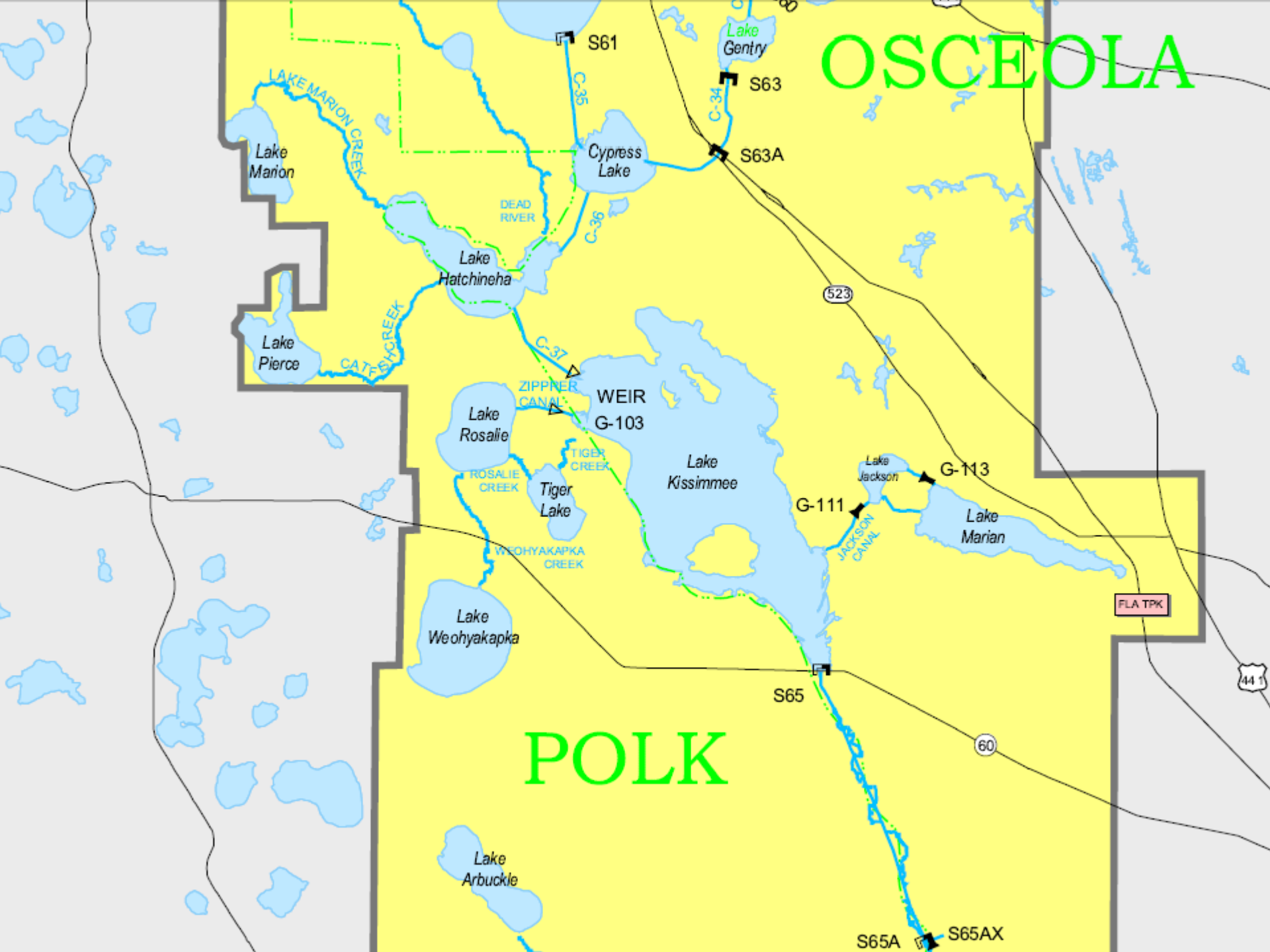


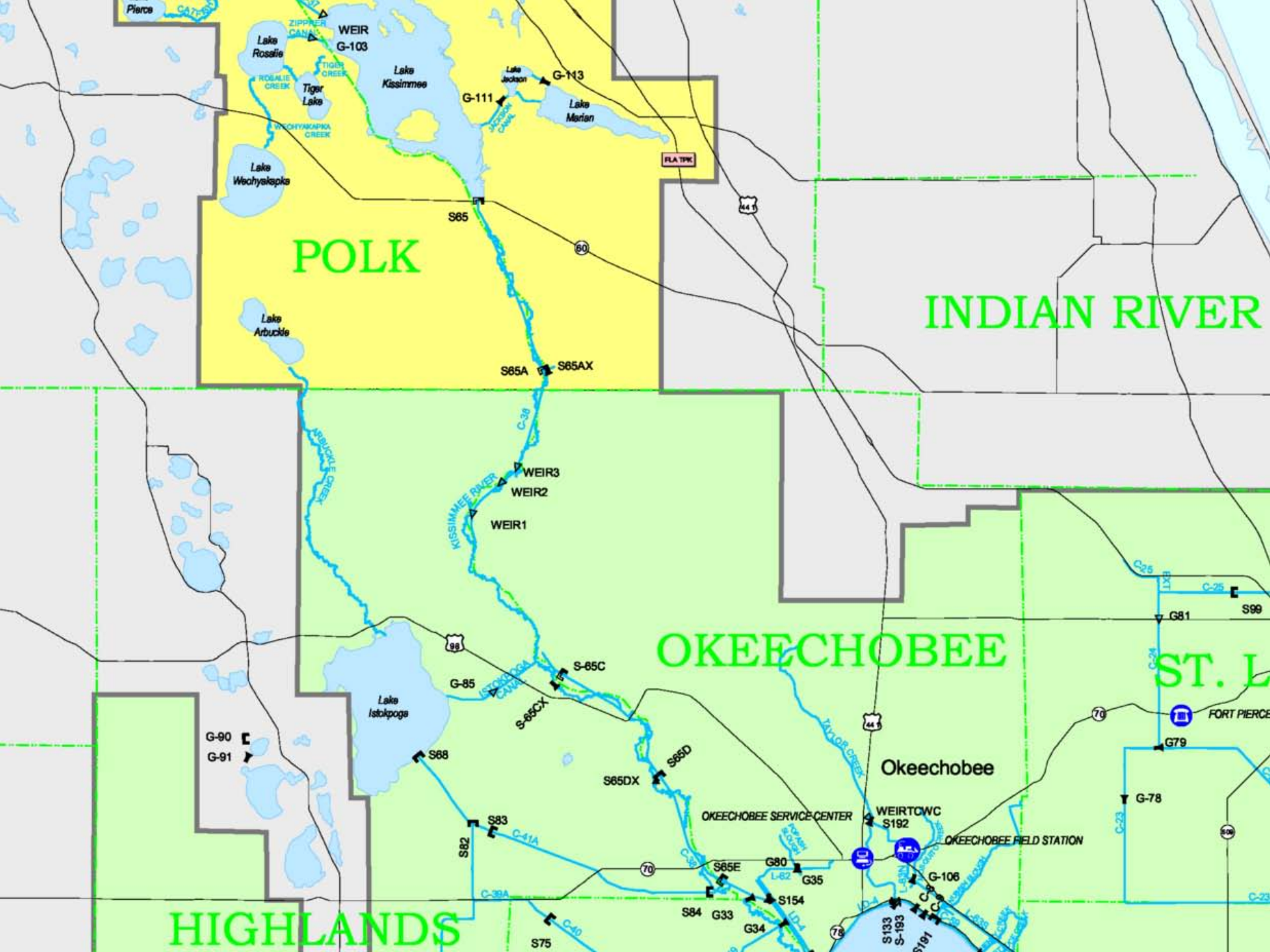
Saturday



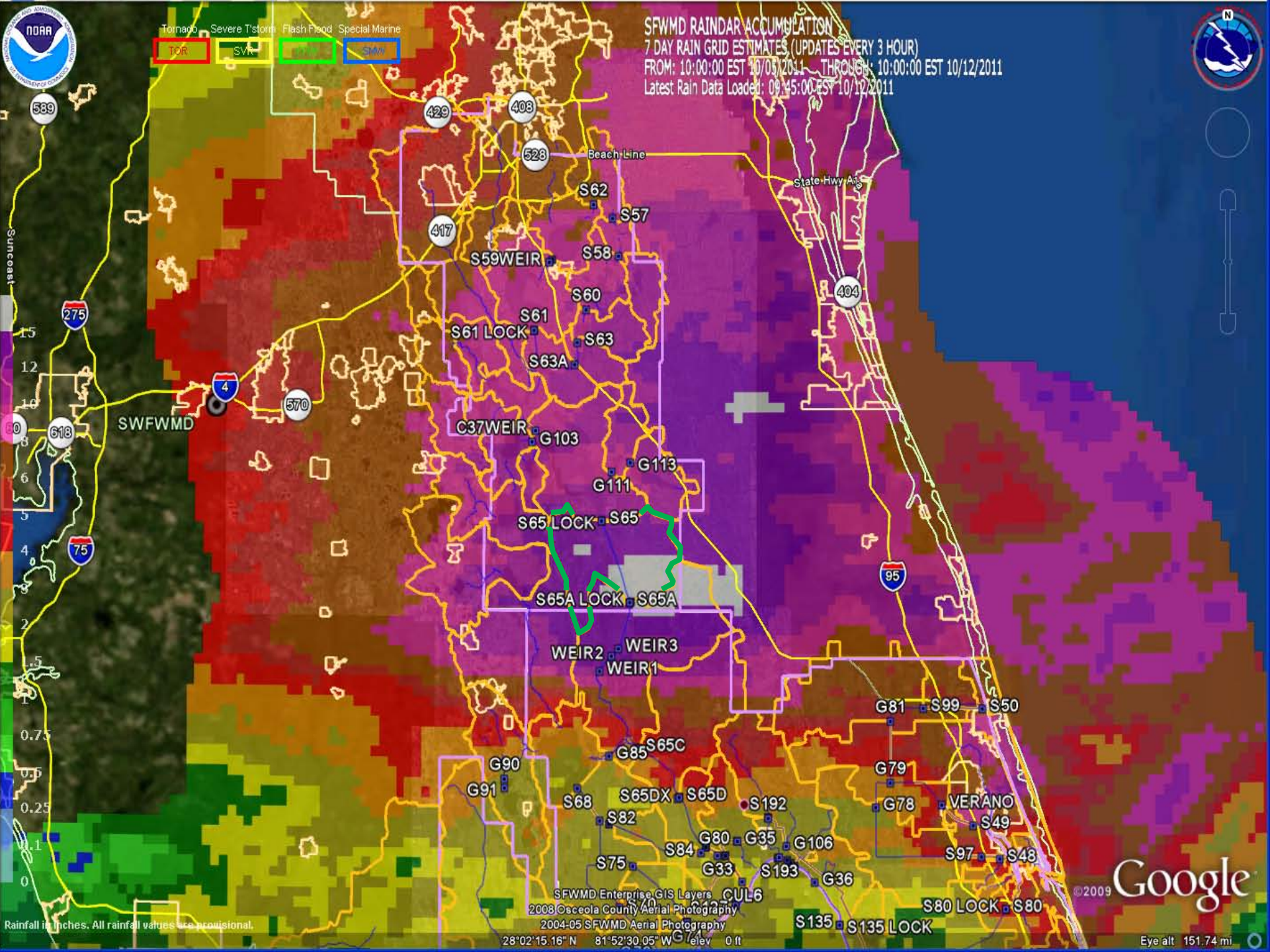
Sunday

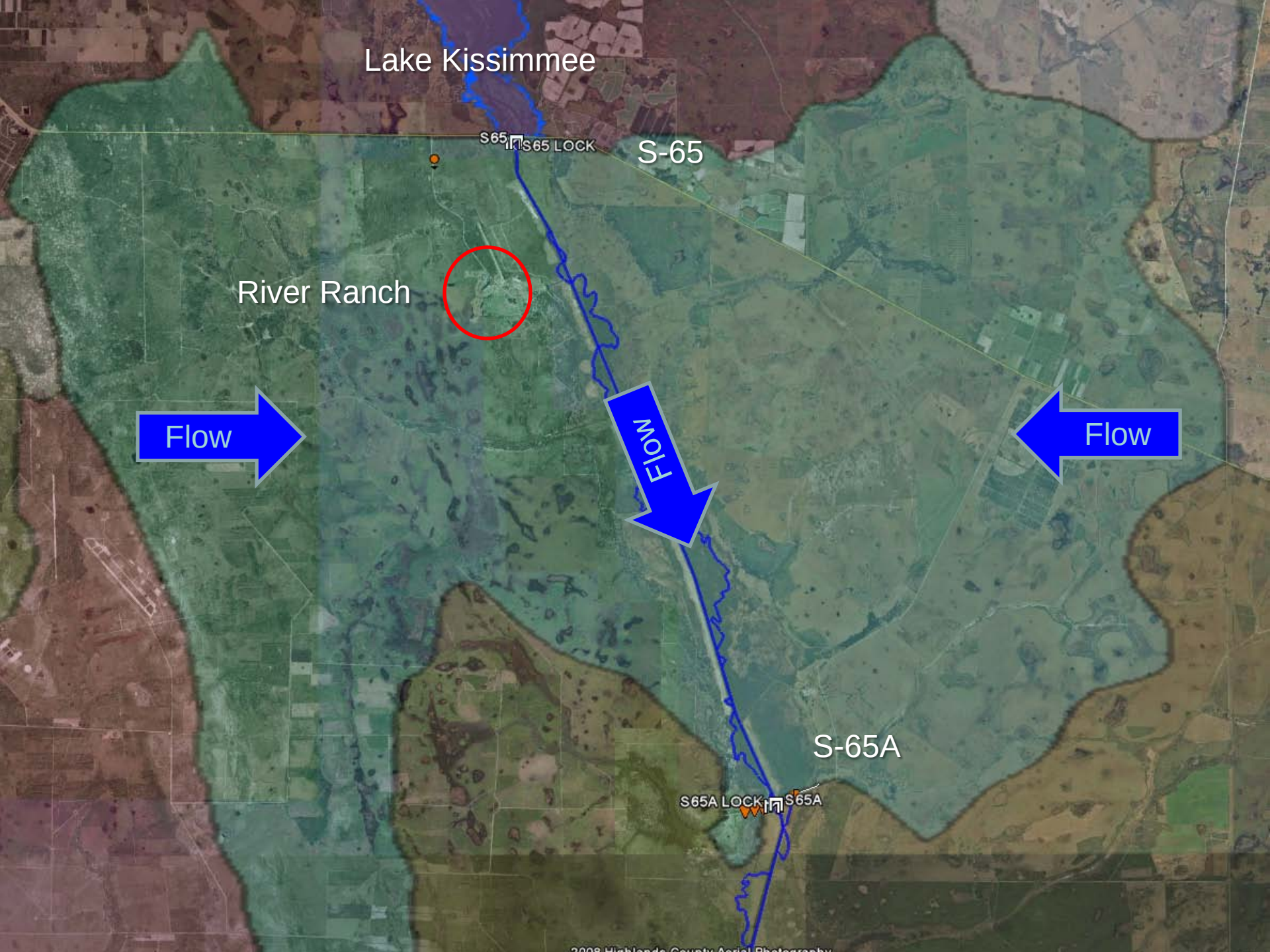
Kissimmee
KISSIMMEE FIELD STATION
SHINGLE CREEK
BOGGY
FLA TPK
4
441
27
523
C-29
Lake Hart
Lake Mary Jane
C-29A
S62
S57
C-30
C-29B
Lake Myrtle
Lake Preston
C-32B
Lake Joel
C-32C
S58
Coon Lake
C-32F
Trout Lake
C-32D
Lake Uzzie
C-32G
East Lake Tohopekaliga
S59
C-31
Lake Tohopekaliga
REEDY CREEK
Alligator Lake
C-33
S60
Lake Gentry
S61
C-35
S63
C-34
S63A
OSCEOLA
LAKE MARION CREEK
Lake Marion
Cypress Lake
DEAD RIVER
C-36
Lake Hatchineha
Lake

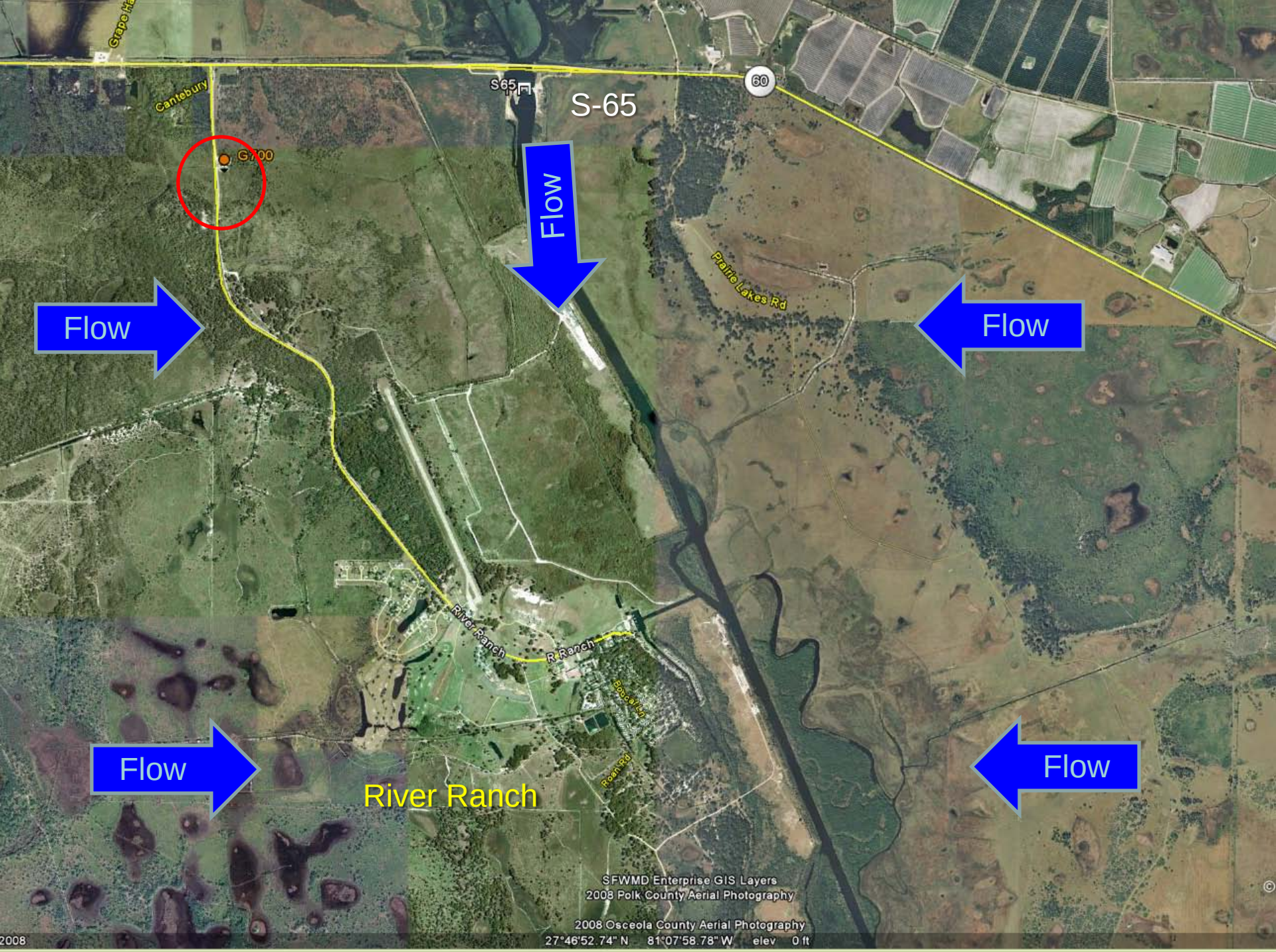

OSCEOLA
POLK
S61
S63
S63A
Lake Gentry
C-35
C-34
C-36
C-37
Cypress Lake
LAKE MARION CREEK
Lake Marion
DEAD RIVER
Lake Hatchineha
CATFISH CREEK
Lake Pierce
ZIPPER CANAL
WEIR
G-103
Lake Rosalie
ROSALIE CREEK
TIGER CREEK
Tiger Lake
WEOHYAKAPKA CREEK
Lake Weohyakapka
Lake Kissimmee
Lake Jackson
G-113
G-111
JACKSON CANAL
Lake Marian
523
FLA TPK
441
60
S65
Lake Arbuckle
S65A
S65AX

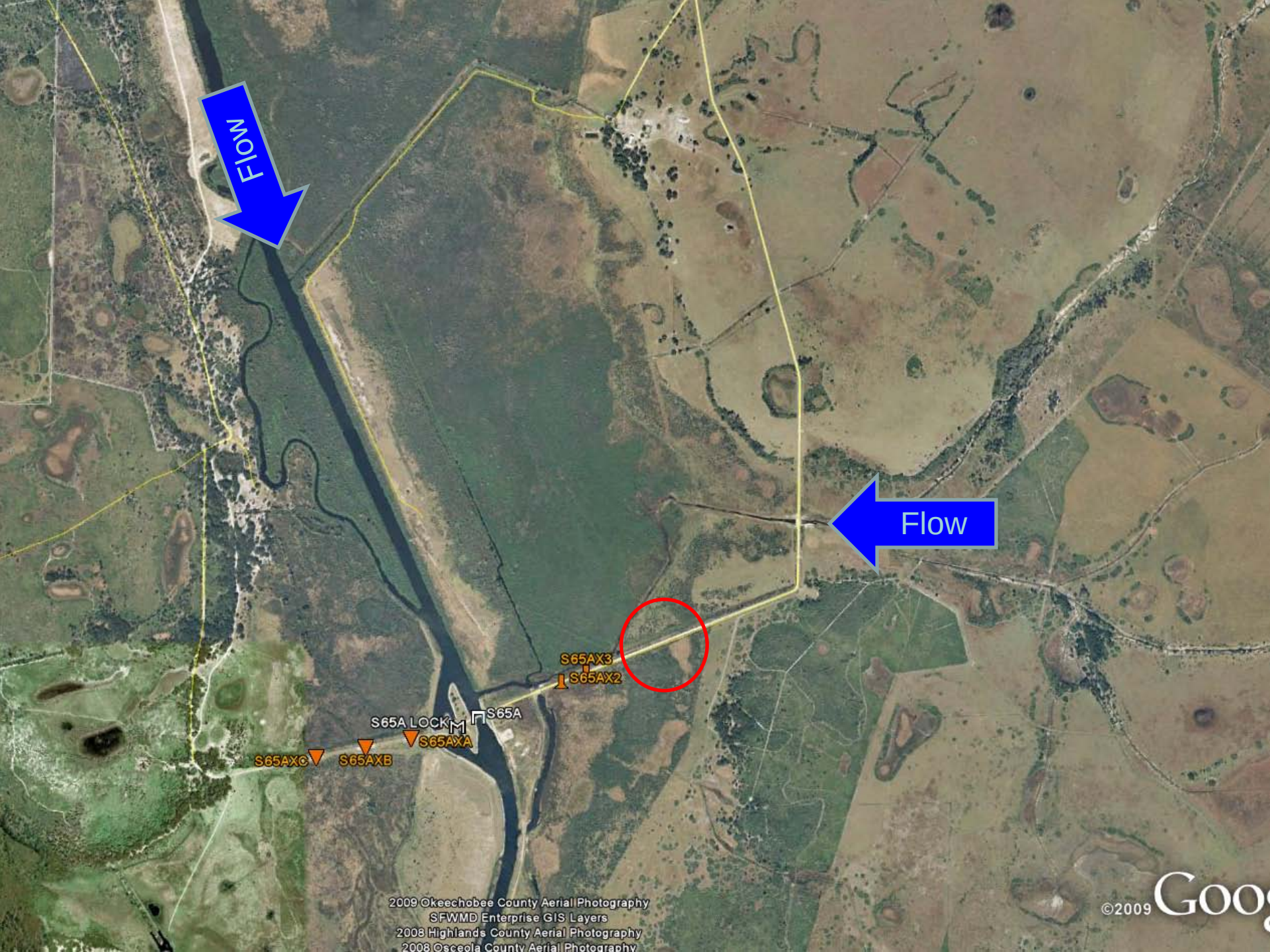


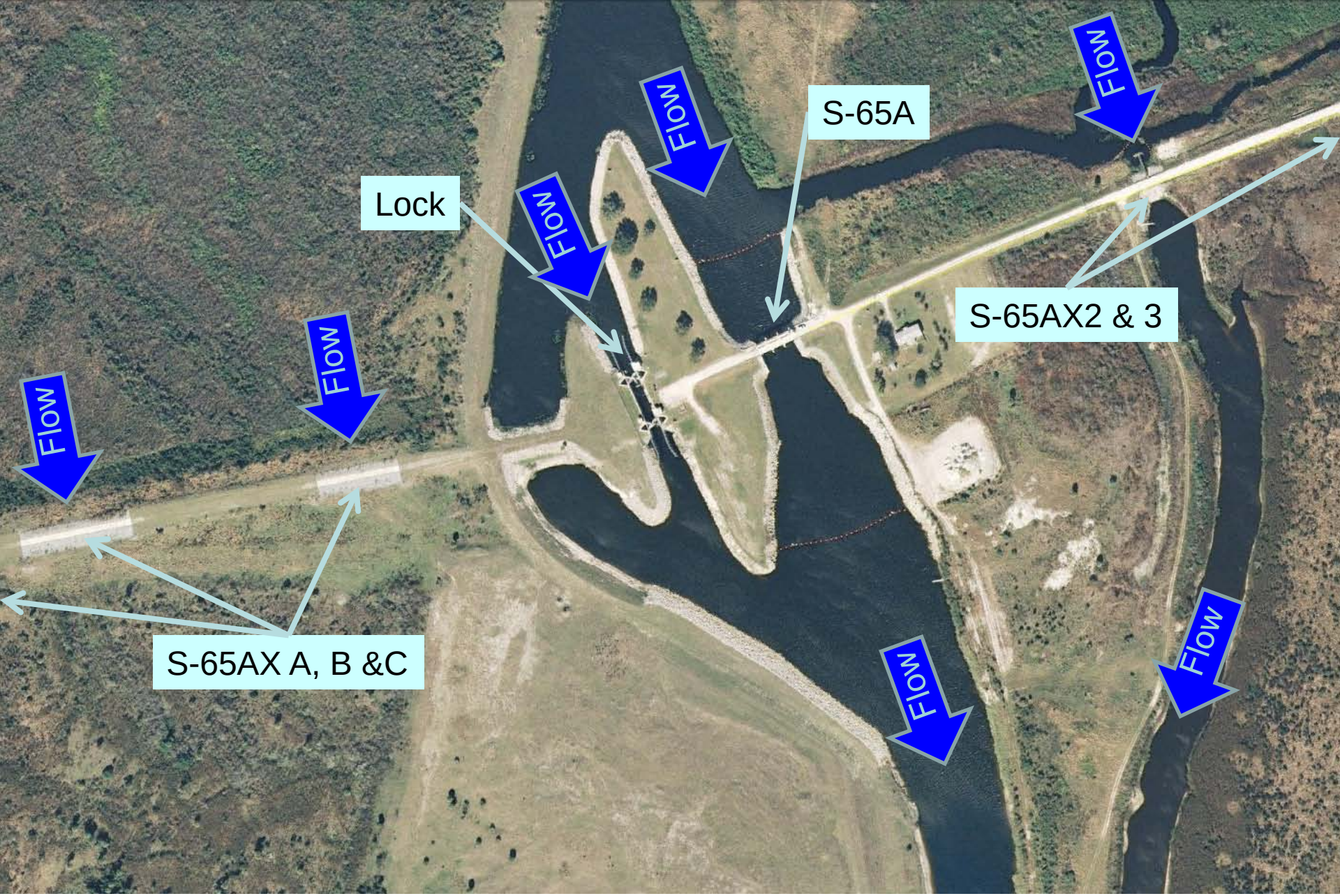
Pierce
ZIPPER CANAL
WEIR
G-103
Lake Rosalie
TIGER CREEK
ROSALIE CREEK
Tiger Lake
Lake Kissimmee
Lake Jackson
G-113
G-111
Lake Marian
JACKSON CANAL
WEOHYAKAPKA CREEK
Lake Weohyakapka
FLA TPK
S65
POLK
INDIAN RIVER
Lake Arbuckle
S65A
S65AX
C-38
ARBUCKLE CREEK
WEIR3
WEIR2
KISSIMMEE RIVER
WEIR1
OKEECHOBEE
ST. L
C-25
EXT
C-25
S99
G81
C-24
FORT PIERCE
G79
G-78
C-23
S-65C
G-85
ISTOKPOGA CANAL
S-65CX
Lake Istokpoga
G-90
G-91
S68
S65D
S65DX
TAYLOR CREEK
Okeechobee
OKEECHOBEE SERVICE CENTER
WEIRTCWC
S192
OKEECHOBEE FIELD STATION
S83
S82
C-41A
C-39A
S65E
G80
G35
G-106
S84
G33
S154
G34
S133
S-193
S191
HIGHLANDS
S75
C-40


Tornado
Severe T'storm
Flash Flood
Special Marine
TOR
SVR
FFW
SMW
SFWMD RAINDAR ACCUMULATION
7 DAY RAIN GRID ESTIMATES (UPDATES EVERY 3 HOUR)
FROM: 10:00:00 EST 10/05/2011 THROUGH: 10:00:00 EST 10/12/2011
Latest Rain Data Loaded: 09:45:00 EST 10/12/2011
Beach Line
State Hwy A1A
Suncoast
SWFWMD
S62
S57
S59WEIR
S58
S60
S61
S61 LOCK
S63
S63A
C37WEIR
G103
G113
G111
S65 LOCK
S65
S65A LOCK
S65A
WEIR2
WEIR3
WEIR1
G81
S99
S50
G85
S65C
G90
G91
G79
S68
S65DX
S65D
S192
G78
VERANO
S82
S49
G80
G35
G106
S84
S97
S48
S75
G33
S193
G36
CUL6
S80 LOCK
S80
S135
S135 LOCK
SFWMD Enterprise GIS Layers
2008 Osceola County Aerial Photography
2004-05 SFWMD Aerial Photography
28°02'15.16" N 81°52'30.05" W elev 0 ft
Rainfall in inches. All rainfall values are provisional.
©2009 Google
Eye alt 151.74 mi


Lake Kissimmee
S65
S65 LOCK
S-65
River Ranch
Flow
Flow
Flow
S-65A
S65A LOCK
S65A
2008 Highlands County Aerial Photography


S-65
Flow
Flow
Flow
Flow
Flow
River Ranch
Canterbury
Prairie Lakes Rd
SFWMD Enterprise GIS Layers
2008 Polk County Aerial Photography
2008 Osceola County Aerial Photography
27°46'52.74" N 81°07'58.78" W elev 0 ft


Flow
Flow
S65AX3
S65AX2
S65A
S65A LOCK
S65AXA
S65AXC
S65AXB
2009 Okeechobee County Aerial Photography
SFWMD Enterprise GIS Layers
2008 Highlands County Aerial Photography
2008 Osceola County Aerial Photography
©2009


Flow
Flow
S-65A
Flow
Lock
Flow
S-65AX2 & 3
Flow
Flow
S-65AX A, B &C
Flow

Ponding on the east slope of the S65A basin.

One of the S65A access road failures by the culvert crossing on Armstrong Slough. Note culverts flowing to the left.

Second failure of the S65 access road,, south of the culvert crossing at Armstrong slough.

C38 reach immediately DS from S65A looking from the south. S65A is in the background.

G700 crossing on the River Ranch access road. View from the west

River Ranch access road being overtopped and working as a long weir.

River Ranch rodeo arena.

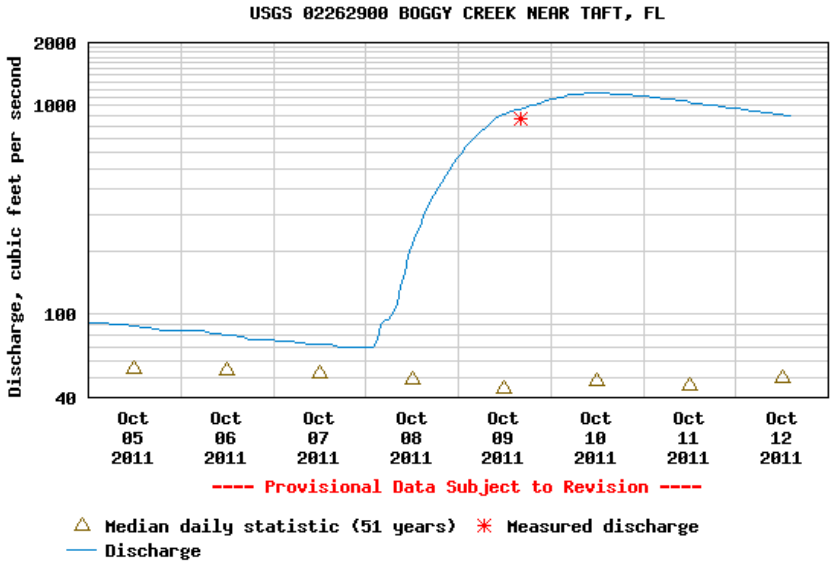
River Ranch looking from the south west.

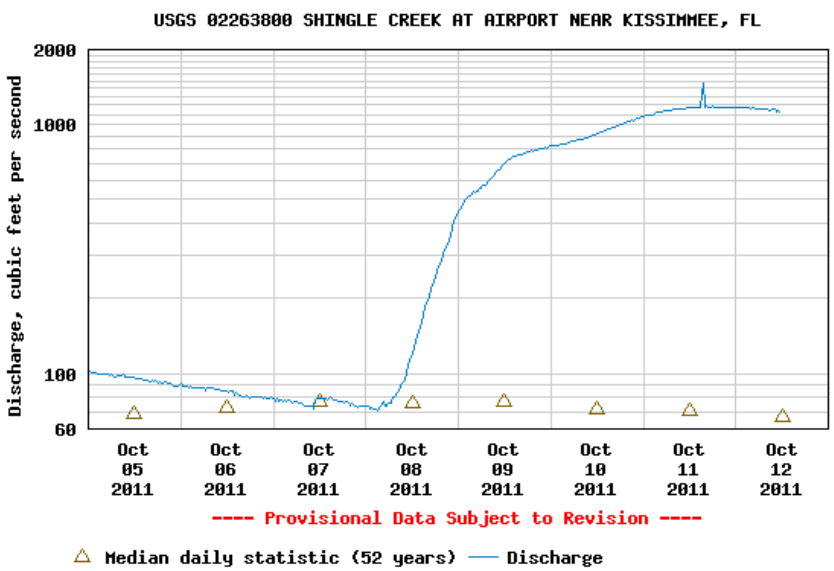
Approximate Flows (cfs) in the Kissimmee River

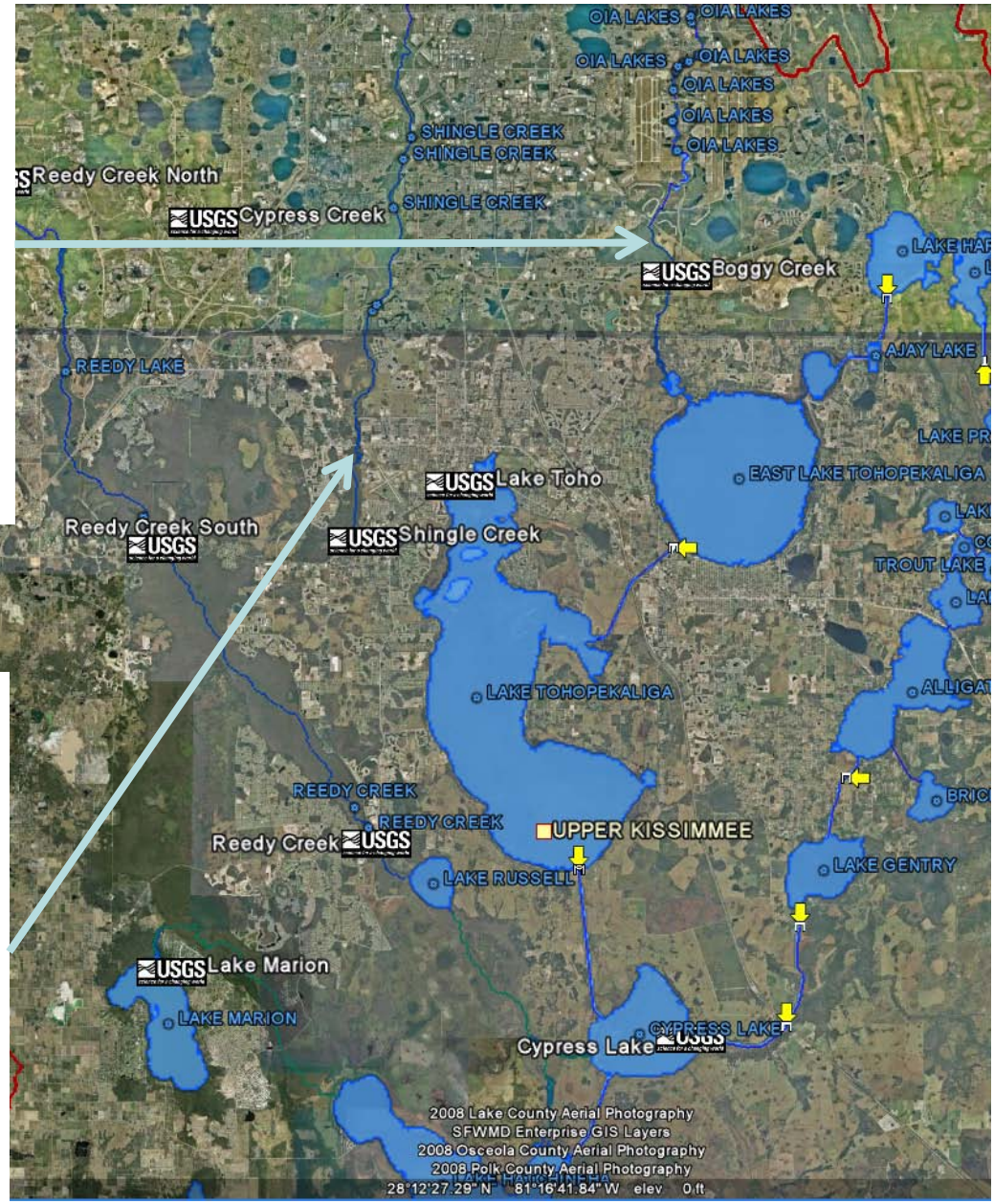
Location	(10/08/11)	10/12/2011 ~ 9 pm
S65	4,000	9,200
S65-A (*)	4,000	11,000
S65-C	1,600	19,500
S65-D	1,800	17,400
S65-E	1,600	19,400

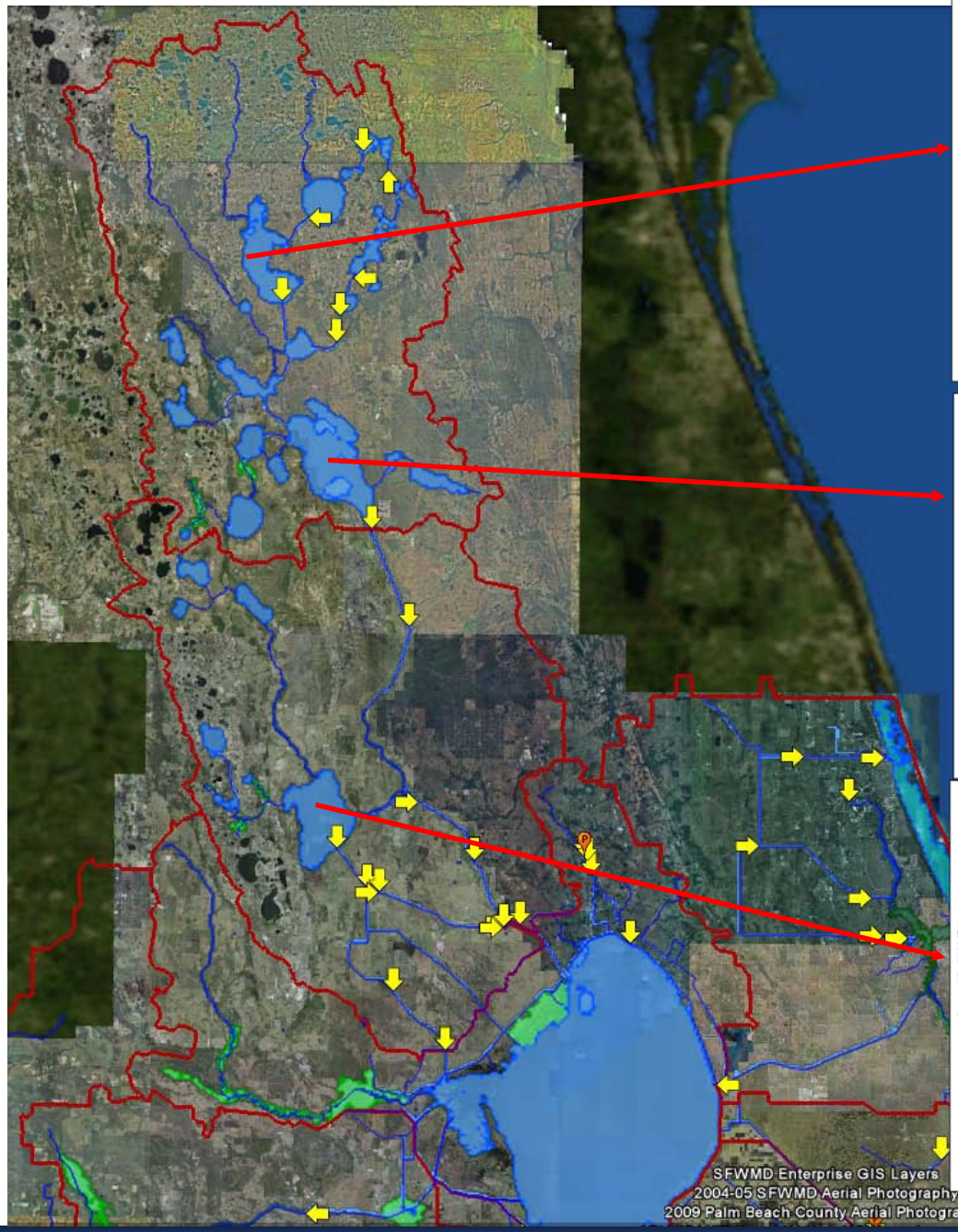
(*) On 10/10/2011 combined total of spillway at 7600 cfs, additional 900 cfs were measured through the culverts located on the eastern tie back levee. Navigation loct was open ~ 9 ft on the evening of 10/10/2011. Measurements on the next day showed ~ 600 cfs passing through the lock.

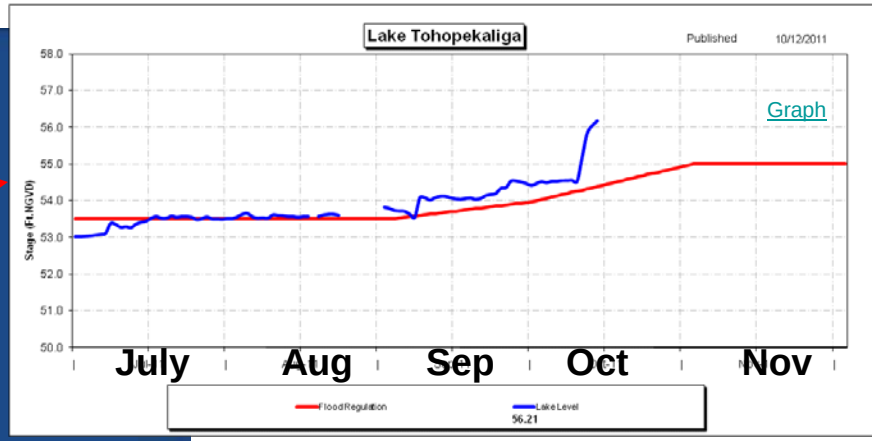
sfwmd.gov

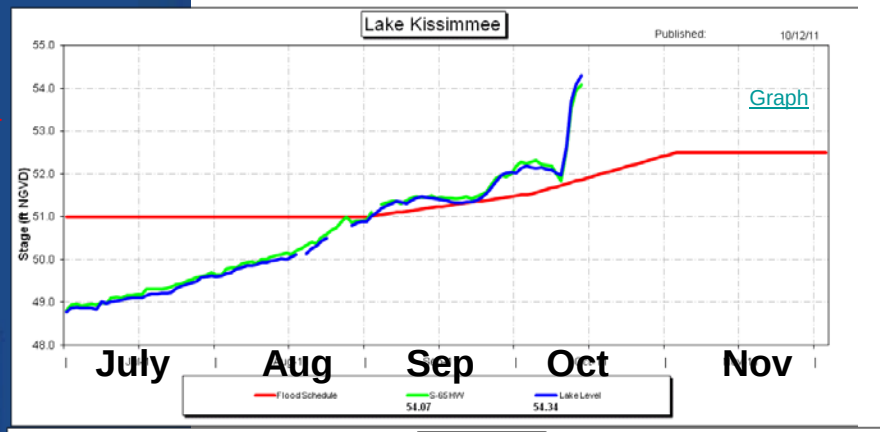

USGS 02262900 BOGGY CREEK NEAR TAFT, FL
Discharge, cubic feet per second
2000
1000
100
40
Oct 05 2011
Oct 06 2011
Oct 07 2011
Oct 08 2011
Oct 09 2011
Oct 10 2011
Oct 11 2011
Oct 12 2011
---- Provisional Data Subject to Revision ----
Median daily statistic (51 years)
Measured discharge
Discharge

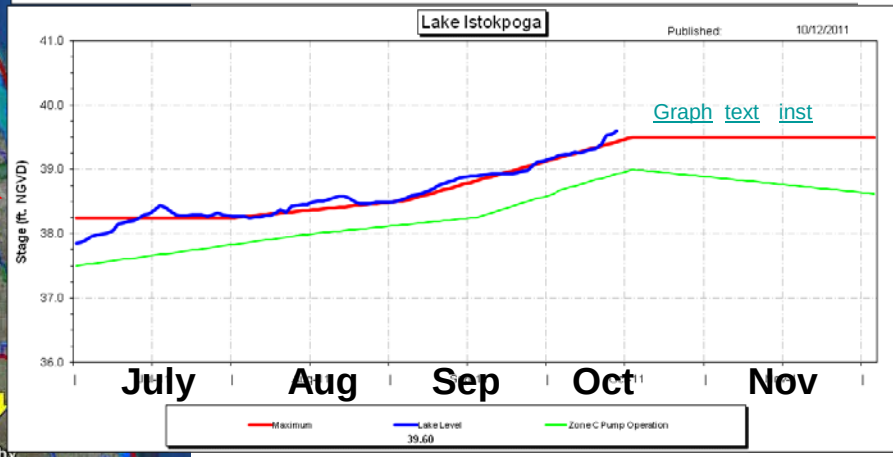

USGS 02263800 SHINGLE CREEK AT AIRPORT NEAR KISSIMMEE, FL
Discharge, cubic feet per second
2000
1000
100
60
Oct 05 2011
Oct 06 2011
Oct 07 2011
Oct 08 2011
Oct 09 2011
Oct 10 2011
Oct 11 2011
Oct 12 2011
---- Provisional Data Subject to Revision ----
Median daily statistic (52 years)
Discharge

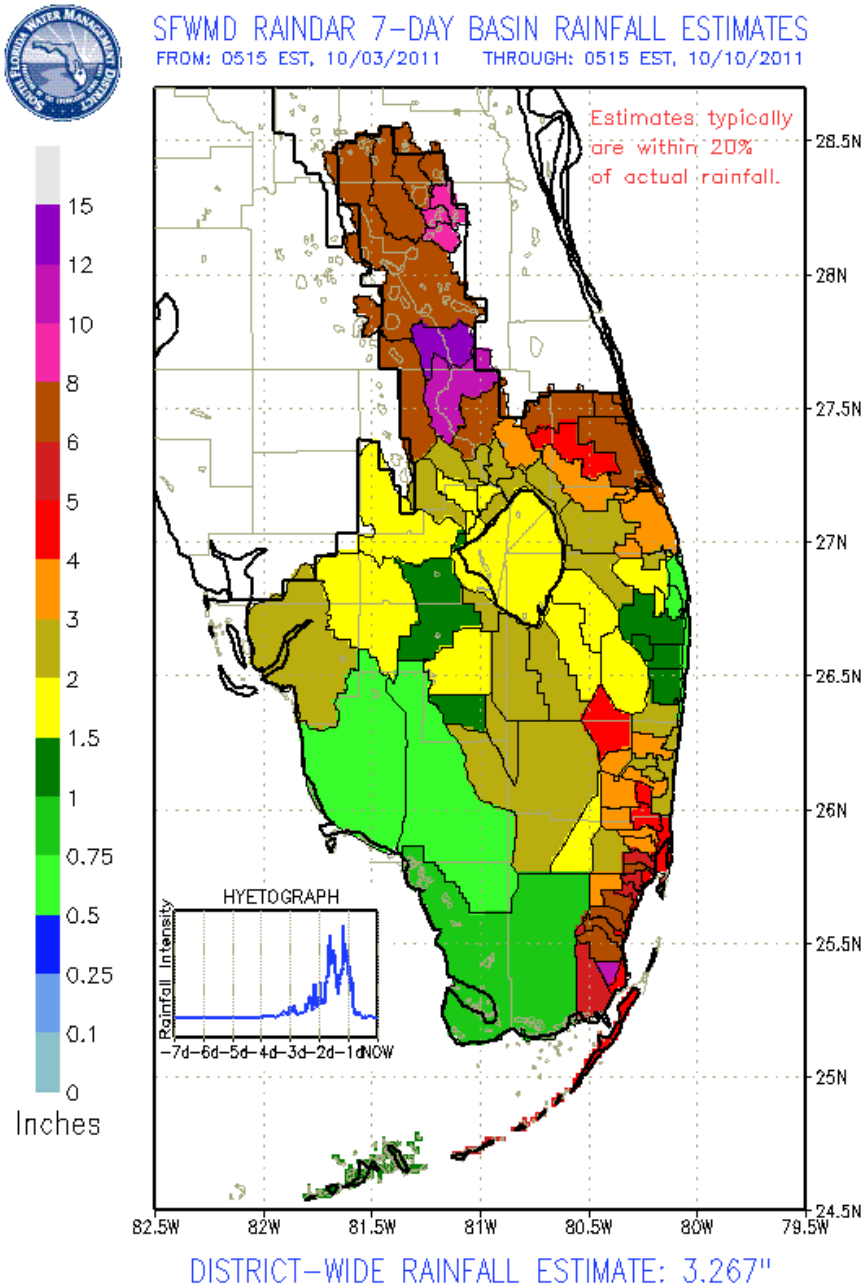

OIA LAKES
SHINGLE CREEK
Reedy Creek North
Cypress Creek
Boggy Creek
REEDY LAKE
AJAY LAKE
Lake Toho
EAST LAKE TOHOPEKALIGA
Reedy Creek South
Shingle Creek
TROUT LAKE
LAKE TOHOPEKALIGA
REEDY CREEK
UPPER KISSIMMEE
Reedy Creek
LAKE RUSSELL
LAKE GENTRY
Lake Marion
LAKE MARION
CYPRESS LAKE
Cypress Lake
2008 Lake County Aerial Photography
SFWMD Enterprise GIS Layers
2008 Osceola County Aerial Photography
2008 Polk County Aerial Photography
28°12'27.29" N 81°16'41.84" W elev 0 ft

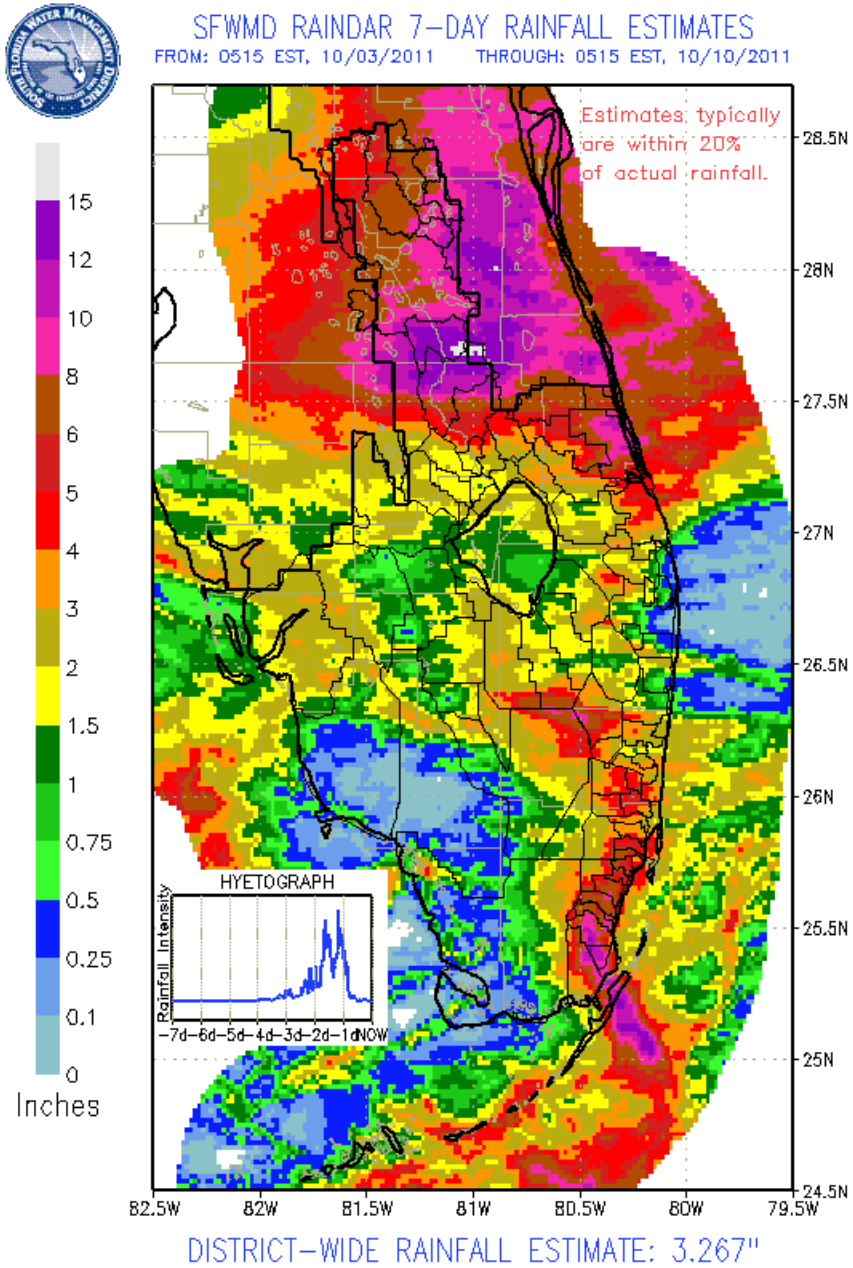

SFWMD Enterprise GIS Layers
2004-05 SFWMD Aerial Photography
2009 Palm Beach County Aerial Photography


Lake Tohopekaliga
Published 10/12/2011
Graph
Stage (Ft.NGVD)
58.0
57.0
56.0
55.0
54.0
53.0
52.0
51.0
50.0
July
Aug
Sep
Oct
Nov
Flood Regulation
Lake Level
56.21


Lake Kissimmee
Published: 10/12/11
Graph
Stage (ft NGVD)
55.0
54.0
53.0
52.0
51.0
50.0
49.0
48.0
July
Aug
Sep
Oct
Nov
Flood Schedule
S-65 HW
Lake Level
54.07
54.34


Lake Istokpoga
Published: 10/12/2011
Graph text inst
Stage (ft. NGVD)
41.0
40.0
39.0
38.0
37.0
36.0
July
Aug
Sep
Oct
Nov
Maximum
Lake Level
Zone C Pump Operation
39.60


SFWMD RAINDAR 7-DAY BASIN RAINFALL ESTIMATES
FROM: 0515 EST, 10/03/2011 THROUGH: 0515 EST, 10/10/2011
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
Inches
HYETOGRAPH
Rainfall Intensity
-7d-6d-5d-4d-3d-2d-1dNOW
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
DISTRICT-WIDE RAINFALL ESTIMATE: 3.267"


SFWMD RAINDAR 7-DAY RAINFALL ESTIMATES
FROM: 0515 EST, 10/03/2011 THROUGH: 0515 EST, 10/10/2011
Estimates typically are within 20% of actual rainfall.
15
12
10
8
6
5
4
3
2
1.5
1
0.75
0.5
0.25
0.1
0
Inches
HYETOGRAPH
Rainfall Intensity
-7d-6d-5d-4d-3d-2d-1dNOW
28.5N
28N
27.5N
27N
26.5N
26N
25.5N
25N
24.5N
82.5W
82W
81.5W
81W
80.5W
80W
79.5W
DISTRICT-WIDE RAINFALL ESTIMATE: 3.267"

sfwmd.gov

South Miami-Dade Agricultural Areas

South Miami-Dade Agricultural Areas

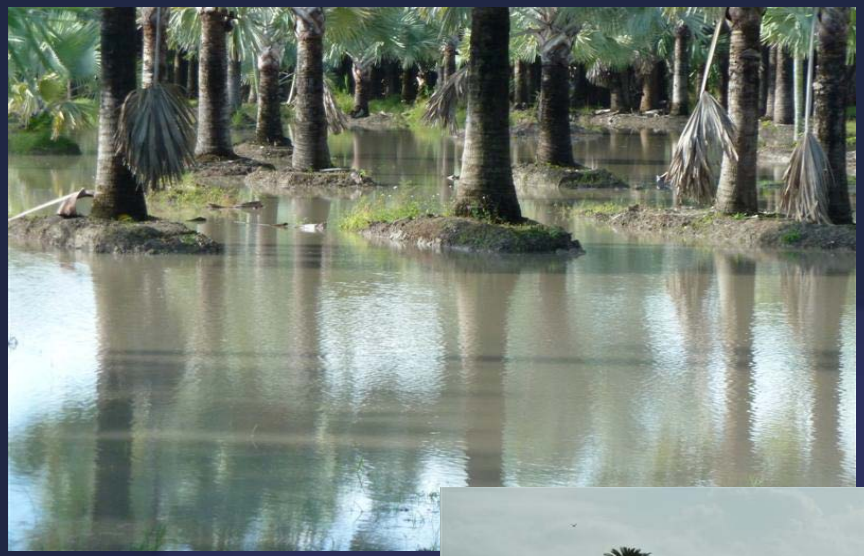
South Miami-Dade Agricultural Area

South Miami-Dade Agricultural Area

South Miami-Dade Agricultural Areas

South Florida Water Management District

SW 112th Ave Ag Fields

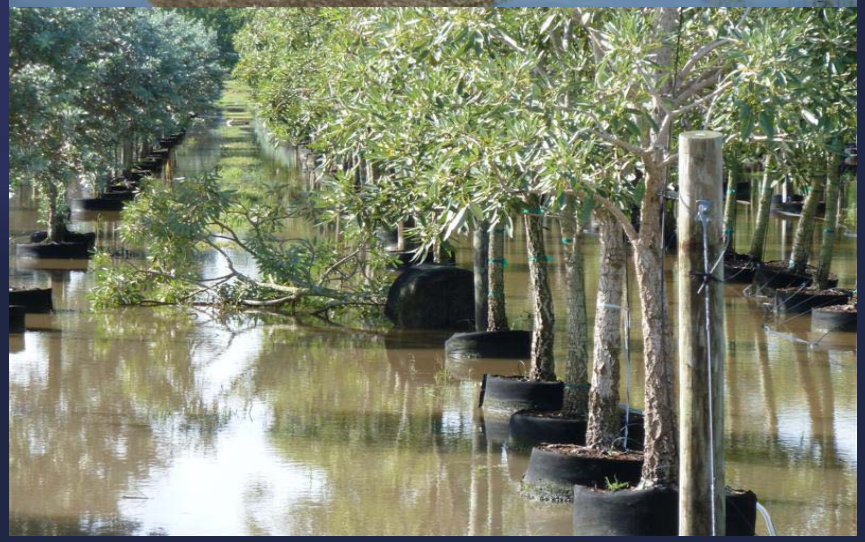


South Miami-Dade Agricultural Areas

South Miami-Dade Agricultural Area

South Florida Water Management District

SW 320th St Ag Fields



South Florida Water Management District

Villages of Homestead

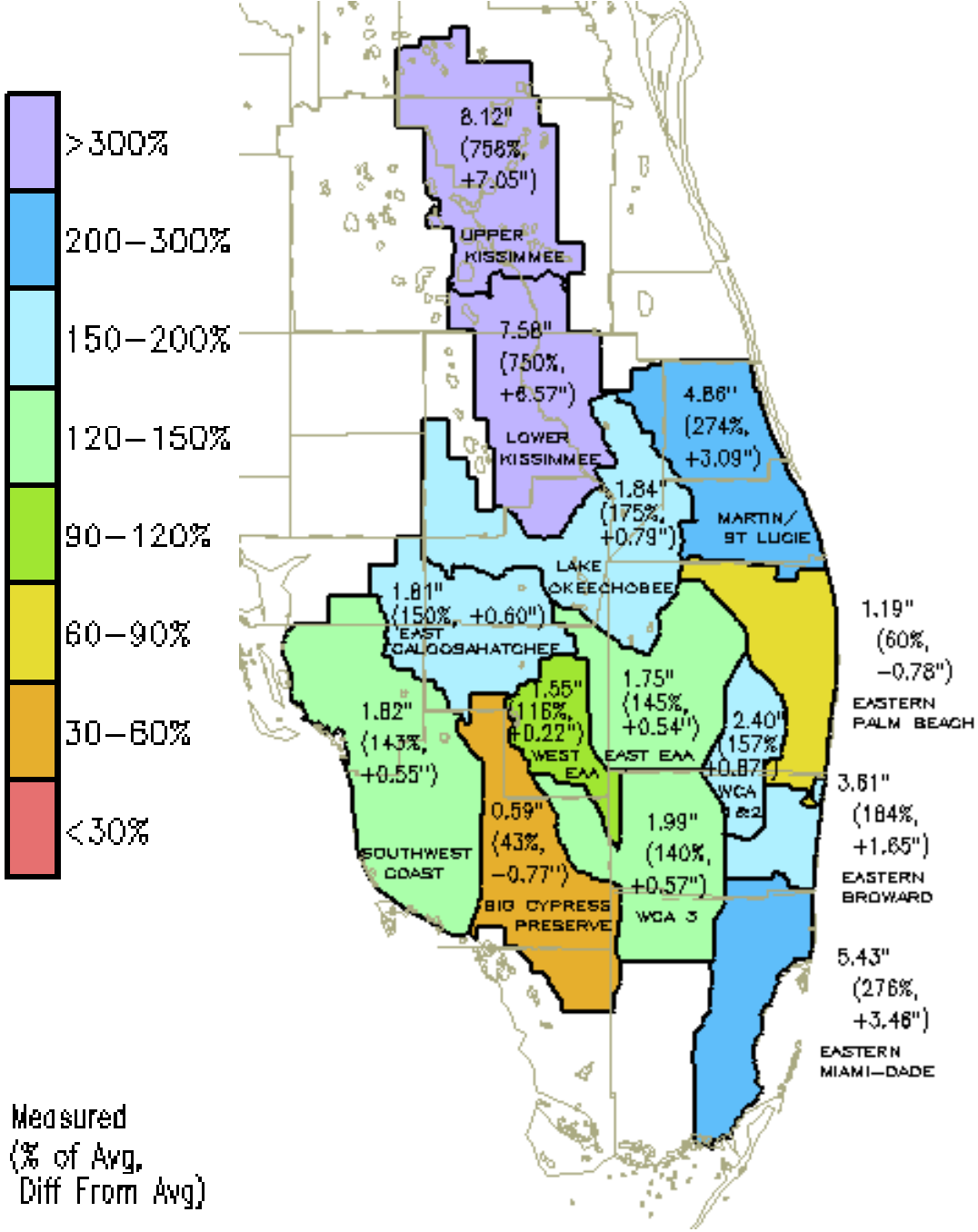
South Florida Water Management District

Aquarius Trailer Park

South Florida Water Management District

SW 172nd Ave & SW 328th St

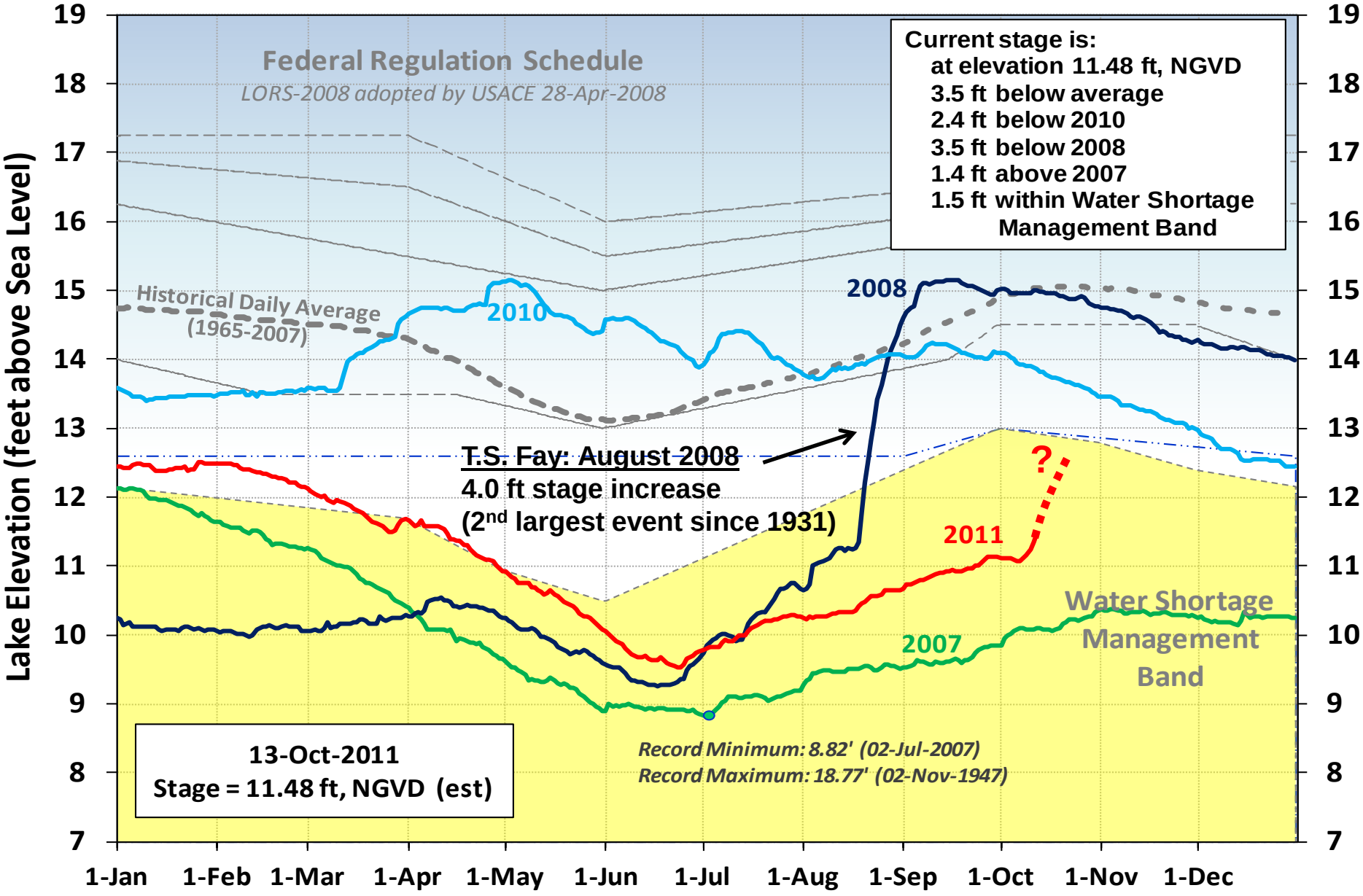
SFWMD 2010-11
October Rainfall
Oct 2 – 12

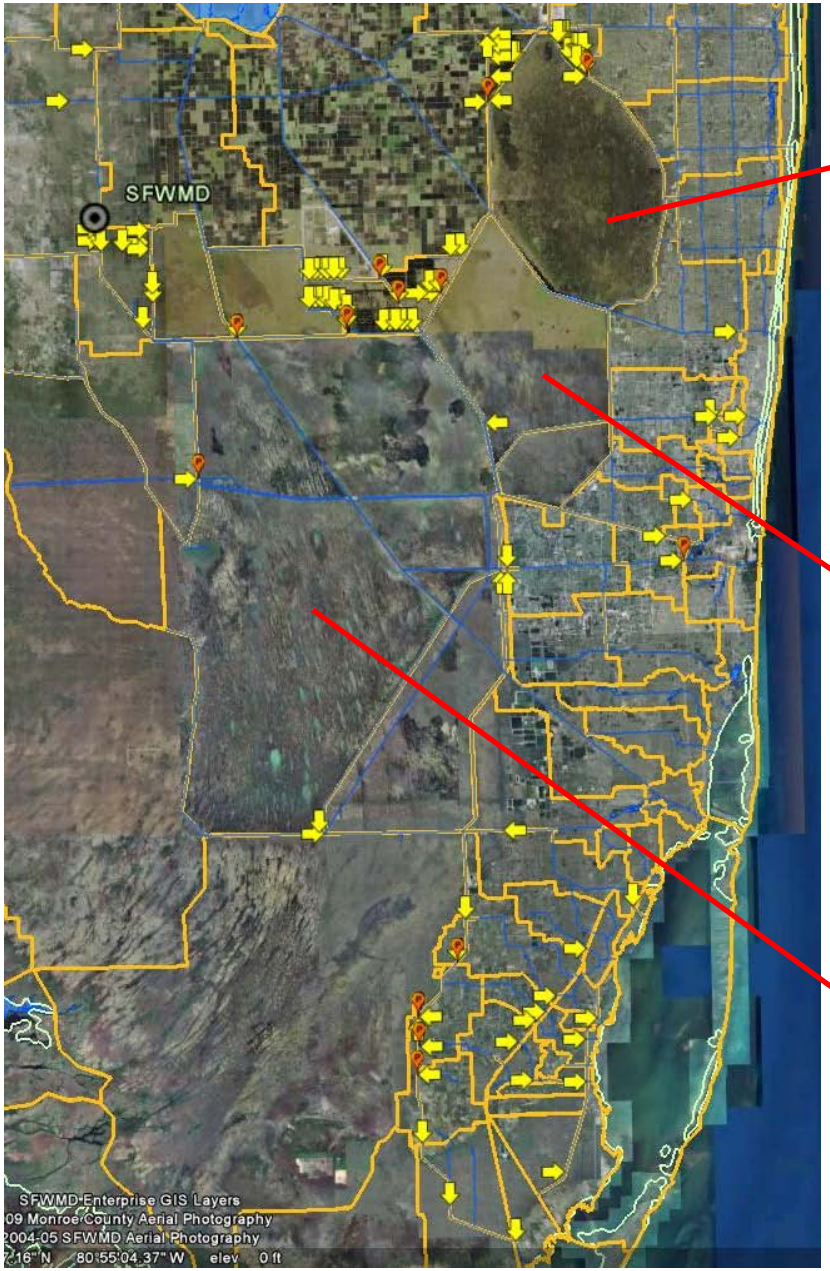


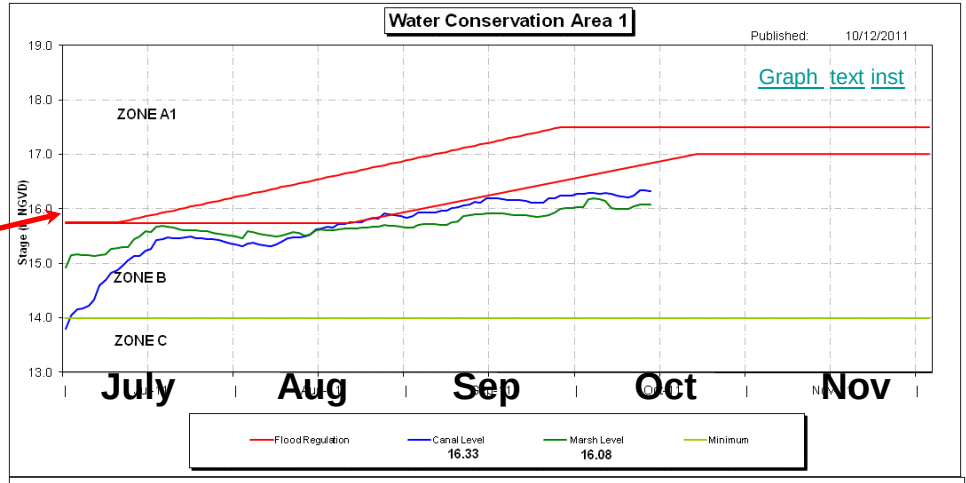
DISTRICT-WIDE: 3.33” (248% of Avg, or +1.99”)

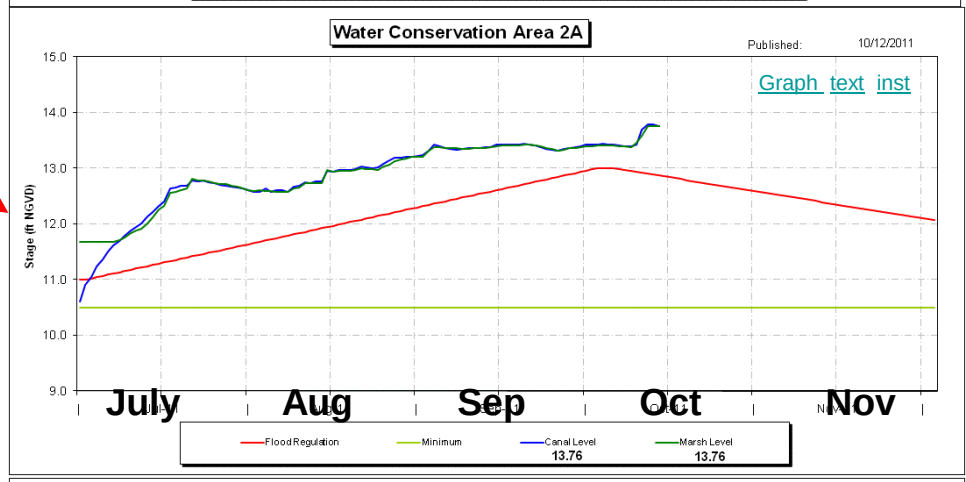
- **Record high rainfall in the Upper and Lower Kissimmee Basins**
- **As of 10/12, all basins above-average except Big Cypress and Eastern Palm Beach County**
- **Likely that average October rainfall (3.78”) will be exceeded this year**

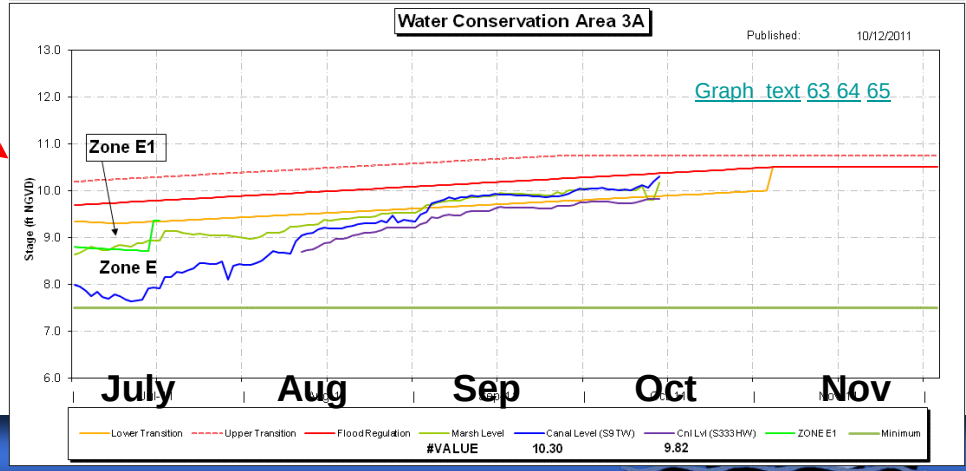
Lake Okeechobee Water Level Comparison




SFWMD
SFWMD Enterprise GIS Layers
09 Monroe County Aerial Photography
2004-05 SFWMD Aerial Photography
7.16" N 80°55'04.37" W elev 0 ft


Water Conservation Area 1
Published: 10/12/2011
Graph text inst
ZONE A1
ZONE B
ZONE C
Stage (ft NGVD)
19.0
18.0
17.0
16.0
15.0
14.0
13.0
July
Aug
Sep
Oct
Nov
Flood Regulation
Canal Level
16.33
Marsh Level
16.08
Minimum


Water Conservation Area 2A
Published: 10/12/2011
Graph text inst
Stage (ft NGVD)
15.0
14.0
13.0
12.0
11.0
10.0
9.0
July
Aug
Sep
Oct
Nov
Flood Regulation
Minimum
Canal Level
13.76
Marsh Level
13.76


Water Conservation Area 3A
Published: 10/12/2011
Graph text 63 64 65
Zone E1
Zone E
Stage (ft NGVD)
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
July
Aug
Sep
Oct
Nov
Lower Transition
Upper Transition
Flood Regulation
Marsh Level
#VALUE
Canal Level (S9TW)
10.30
Cnl Lvl (S333HW)
9.82
ZONE E1
Minimum

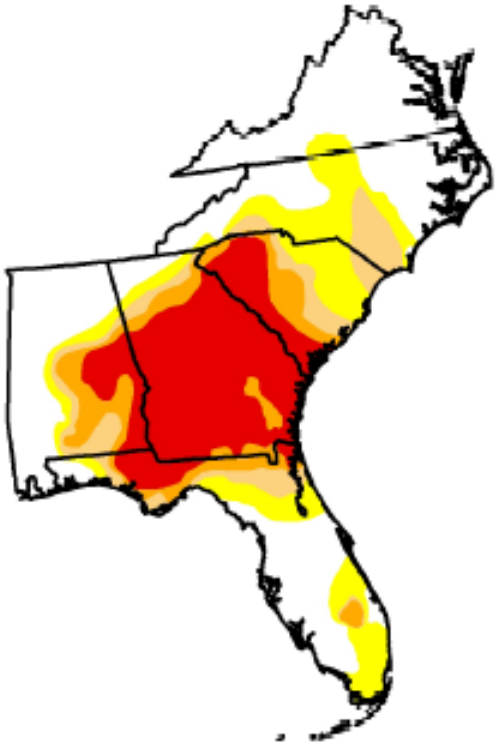
U.S. Drought Monitor

Southeast

October 4, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	42.53	57.47	41.77	32.78	24.01	0.00
Last Week (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
3 Months Ago (07/05/2011 map)	15.45	84.55	67.81	45.93	31.27	13.56
Start of Calendar Year (12/28/2010 map)	23.01	76.99	51.84	23.55	5.63	0.00
Start of Water Year (09/27/2011 map)	42.24	57.76	41.82	31.77	23.48	0.00
One Year Ago (09/28/2010 map)	18.18	81.82	38.04	10.32	0.90	0.00



Intensity:

- *D0 Abnormally Dry*
- *D1 Drought - Moderate*
- *D2 Drought - Severe*
- *D3 Drought - Extreme*
- *D4 Drought - Exceptional*

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

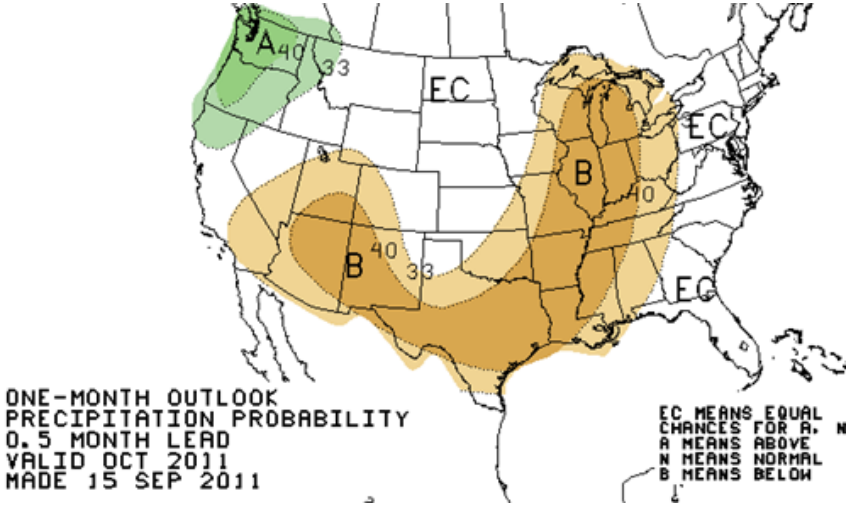
USDA National Drought Mitigation Center

Released Thursday, October 6, 2011

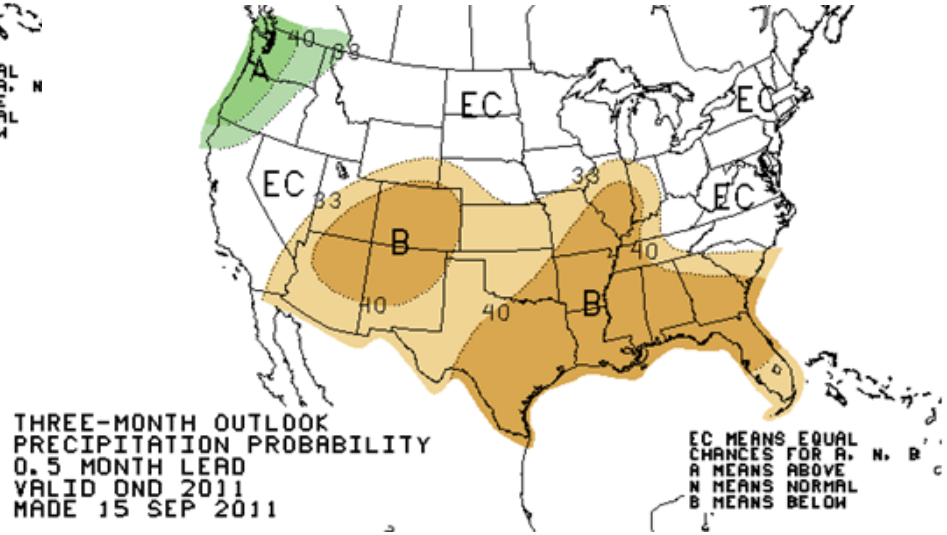
U. S. Seasonal Precipitation Outlook

National Climate Prediction Center (CPC)

October

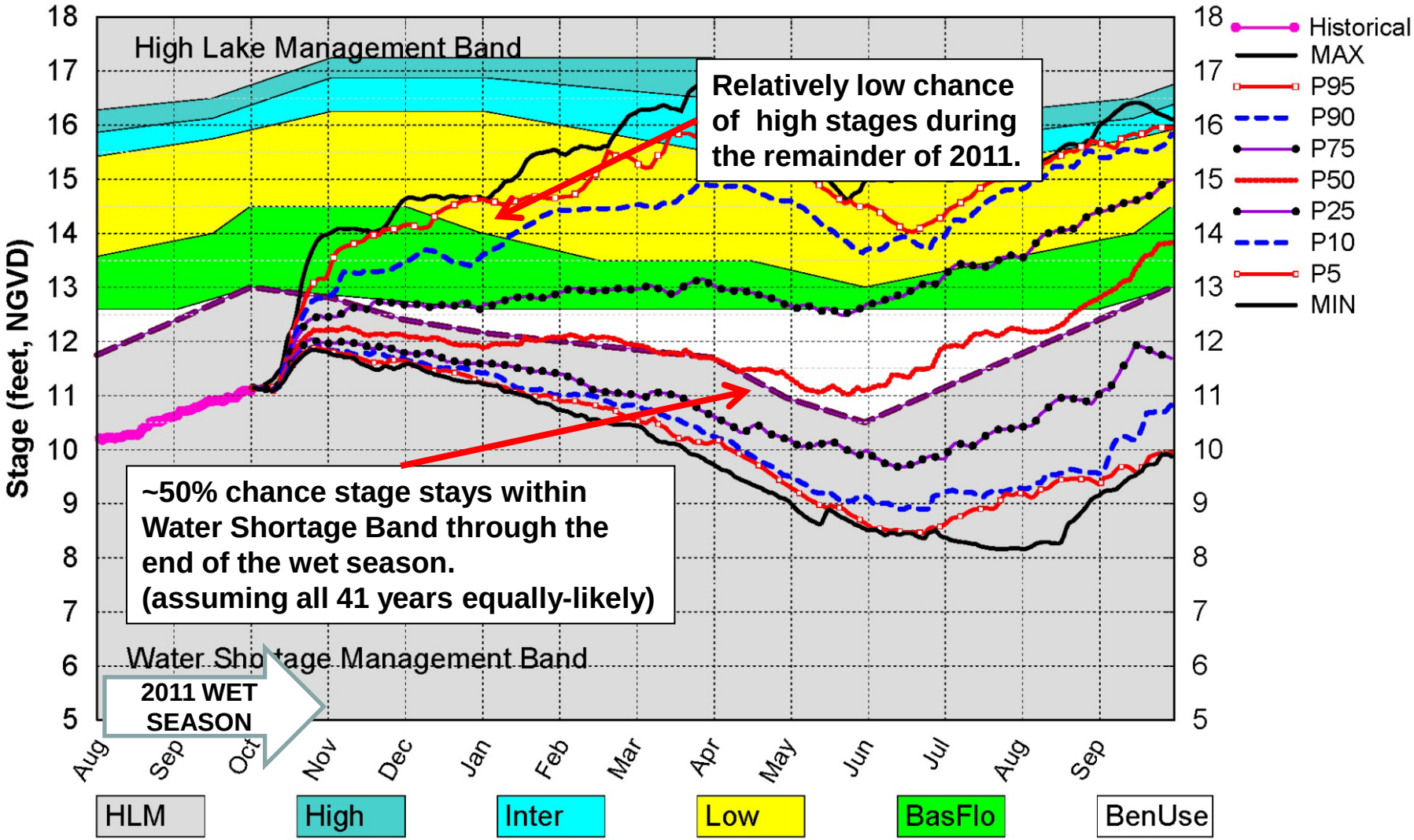


October – November - December



Lake Okeechobee SFWMM October 2011 Position Analysis

Percentiles based on 41 possible outcomes starting with October initialization

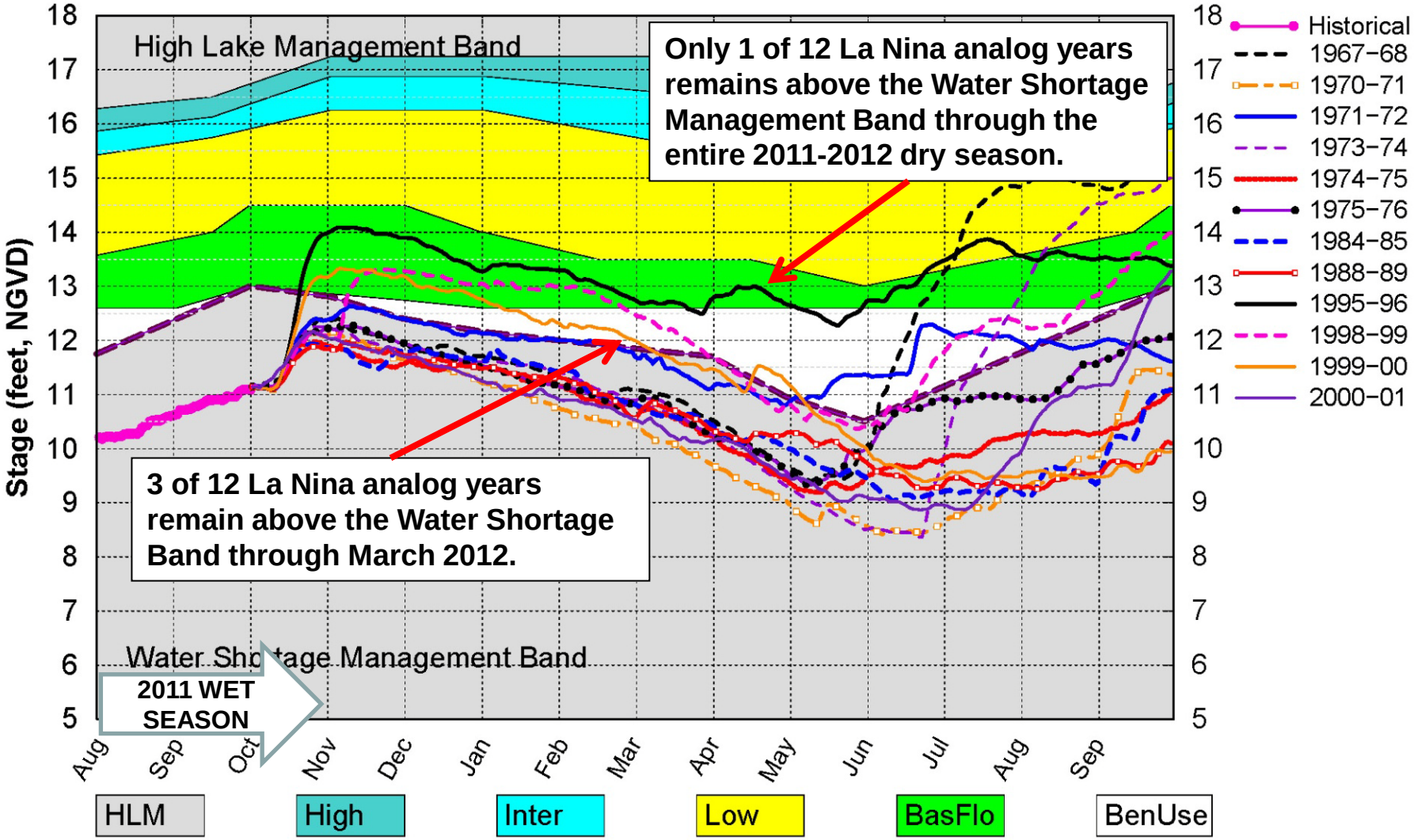


(See assumptions on the Position Analysis Results website)

Wed Oct 12 17:44:52 2011

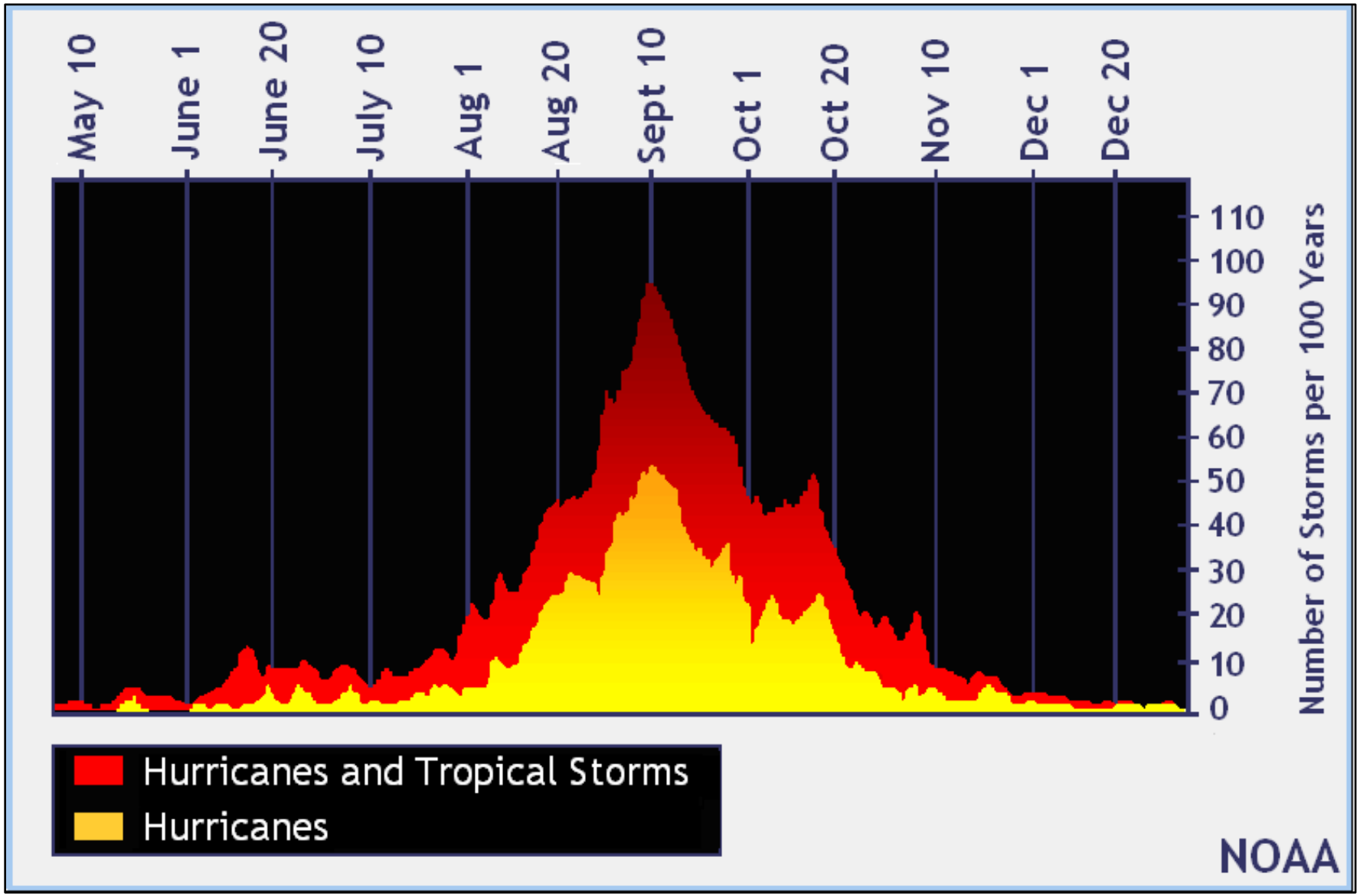
Lake Okeechobee SFWMM October 2011 for October 8−9 Rain Event

12 La Nina Analog Years based on 1-October initialization

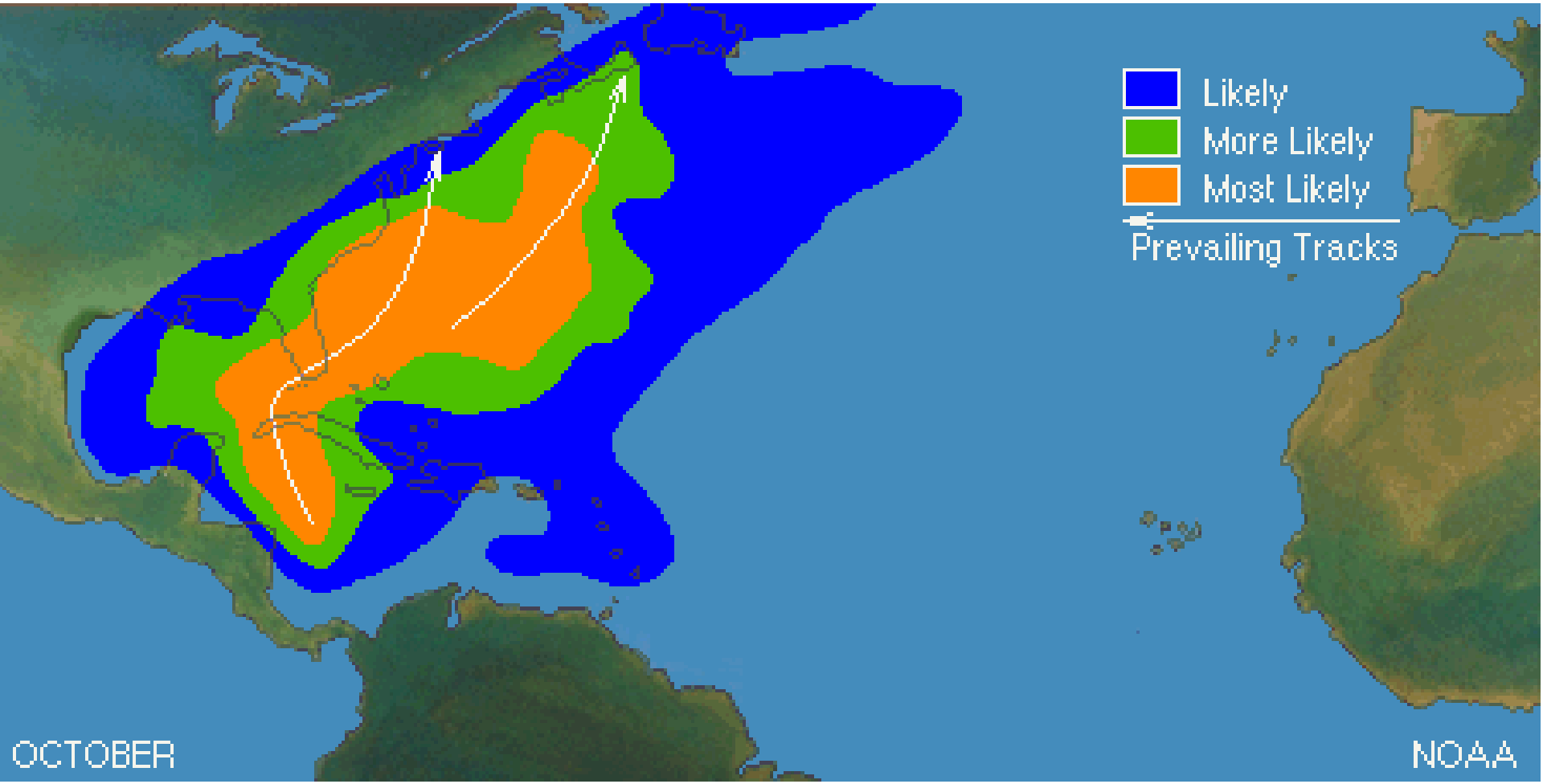


(See assumptions on the Position Analysis Results website)

Wed Oct 12 16:48:46 2011


May 10
June 1
June 20
July 10
Aug 1
Aug 20
Sept 10
Oct 1
Oct 20
Nov 10
Dec 1
Dec 20
110
100
90
80
70
60
50
40
30
20
10
0
Number of Storms per 100 Years
Hurricanes and Tropical Storms
Hurricanes
NOAA

October - Typical Tropical System Formation



Questions