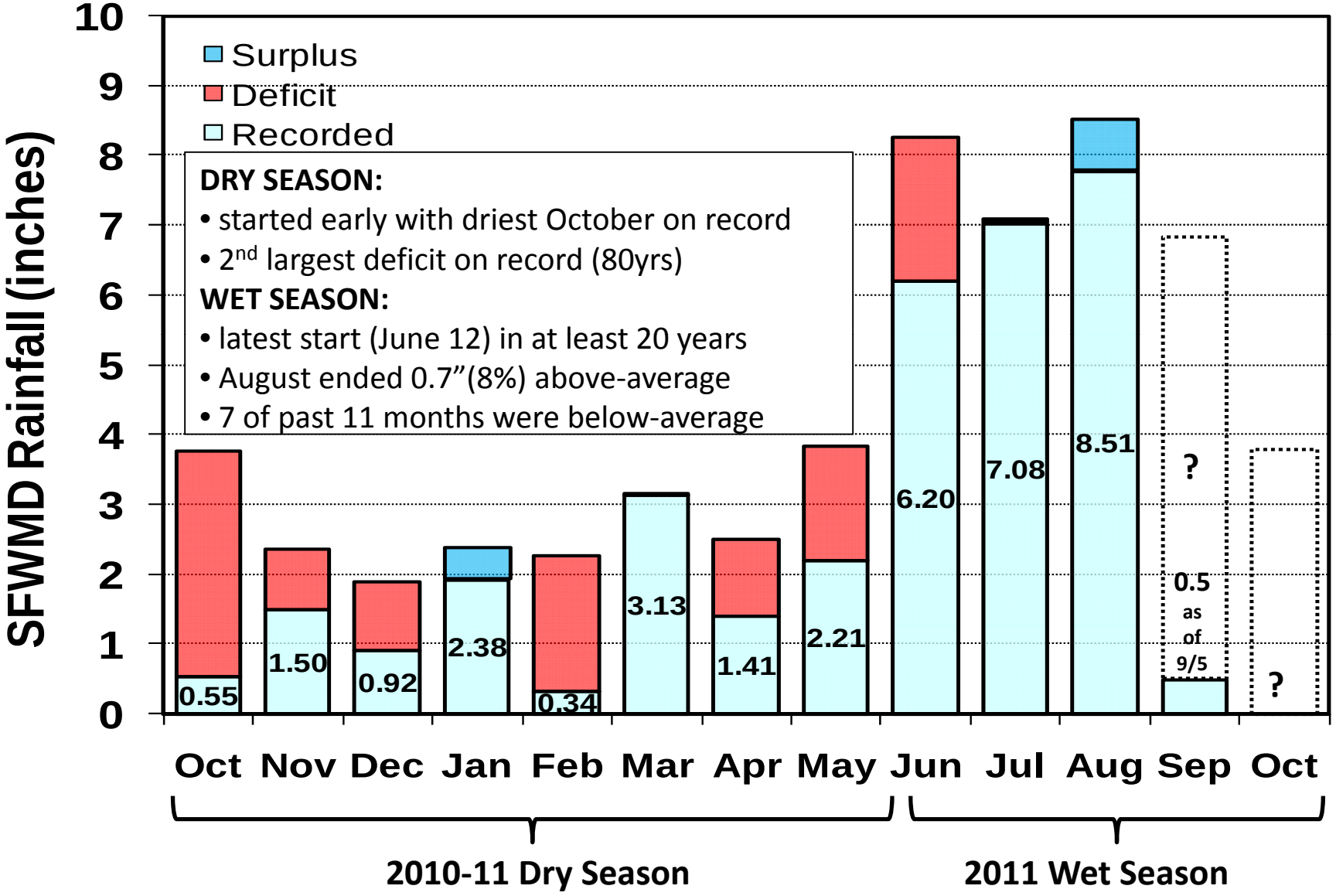
Water Management Operations
Dry Season 2010-2011

Technical Oversight Committee
September 14, 2011

Susan Sylvester, Chief
Water Control Operations Bureau
South Florida Water Management District

SFWMD Rainfall Distribution Comparison
(Oct 2010 - Aug 2011)



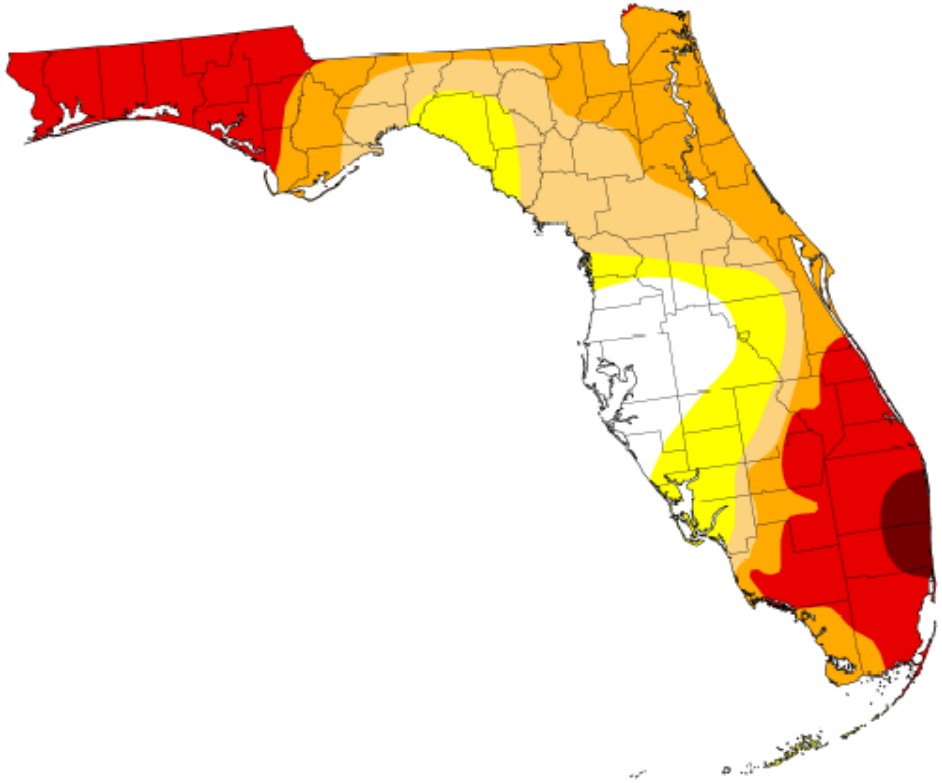
U.S. Drought Monitor

Florida

May 31, 2011
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	9.79	90.21	76.31	56.50	31.10	2.32
Last Week (05/24/2011 map)	9.79	90.21	75.03	53.73	28.65	0.00
3 Months Ago (03/01/2011 map)	0.87	99.13	91.30	53.50	13.06	0.00
Start of Calendar Year (12/28/2010 map)	0.18	99.82	86.04	50.84	20.21	0.00
Start of Water Year (09/28/2010 map)	54.97	45.03	18.02	4.22	0.00	0.00
One Year Ago (05/25/2010 map)	100.00	0.00	0.00	0.00	0.00	0.00



Intensity:

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

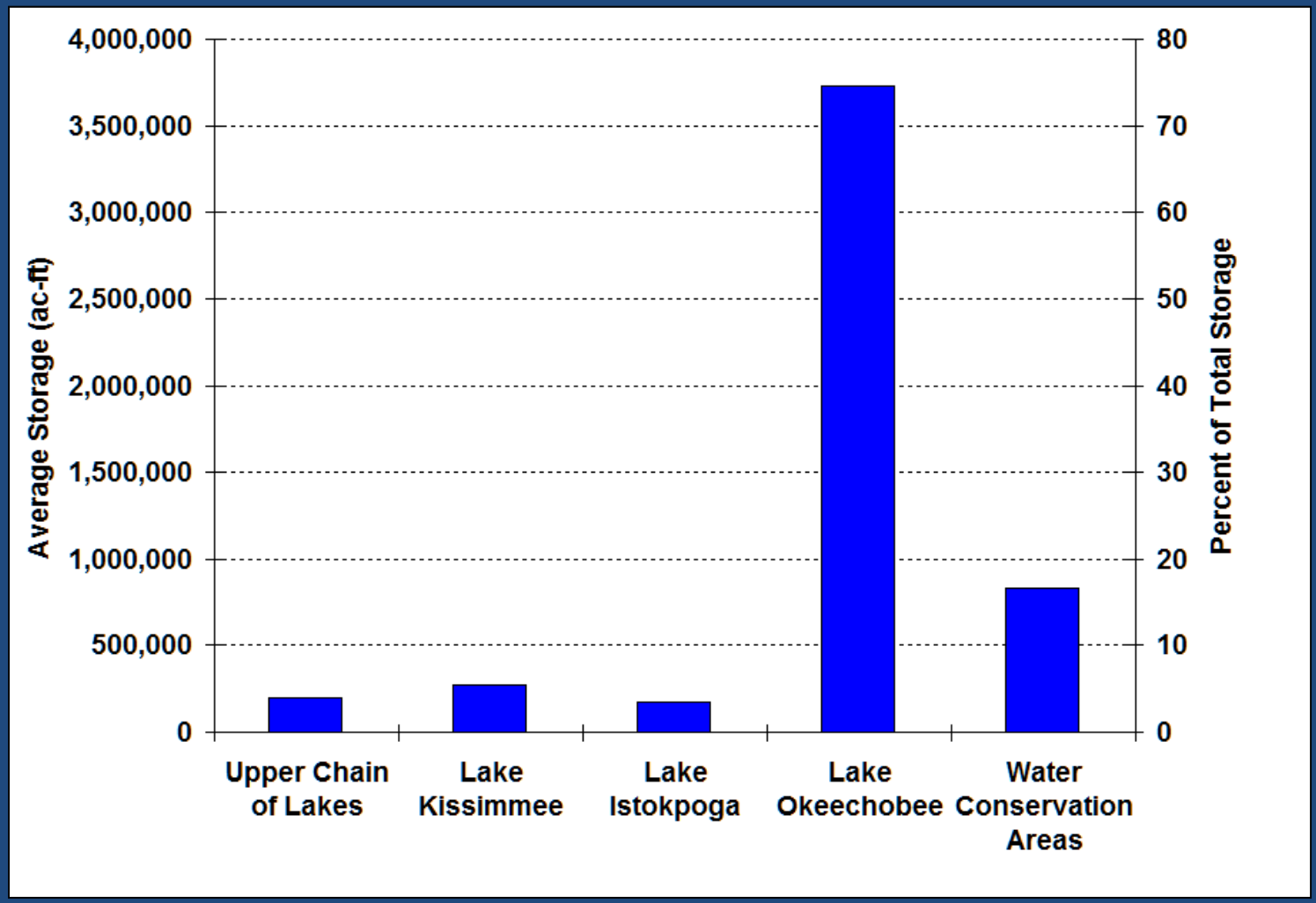
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

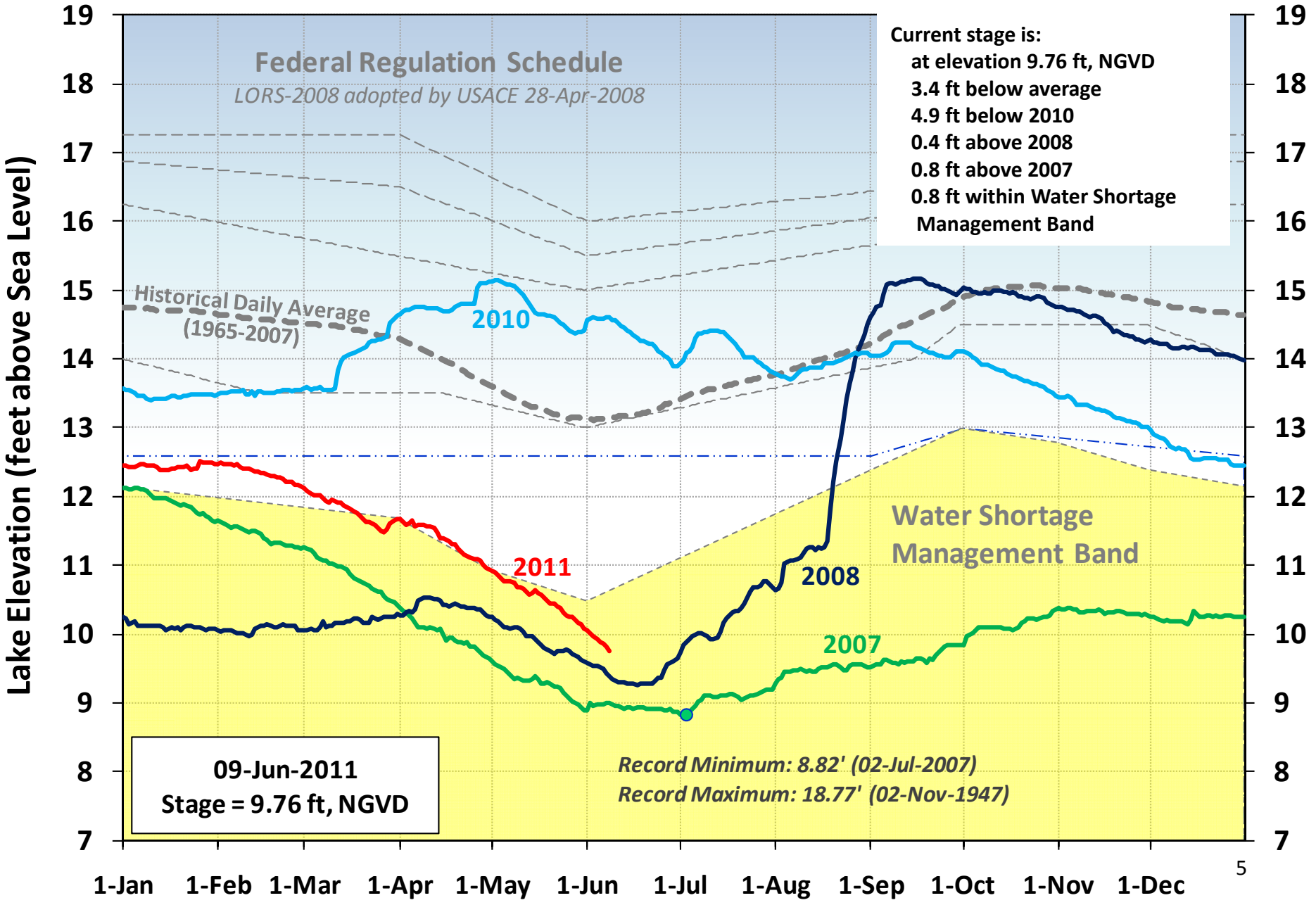
Released Thursday, June 2, 2011

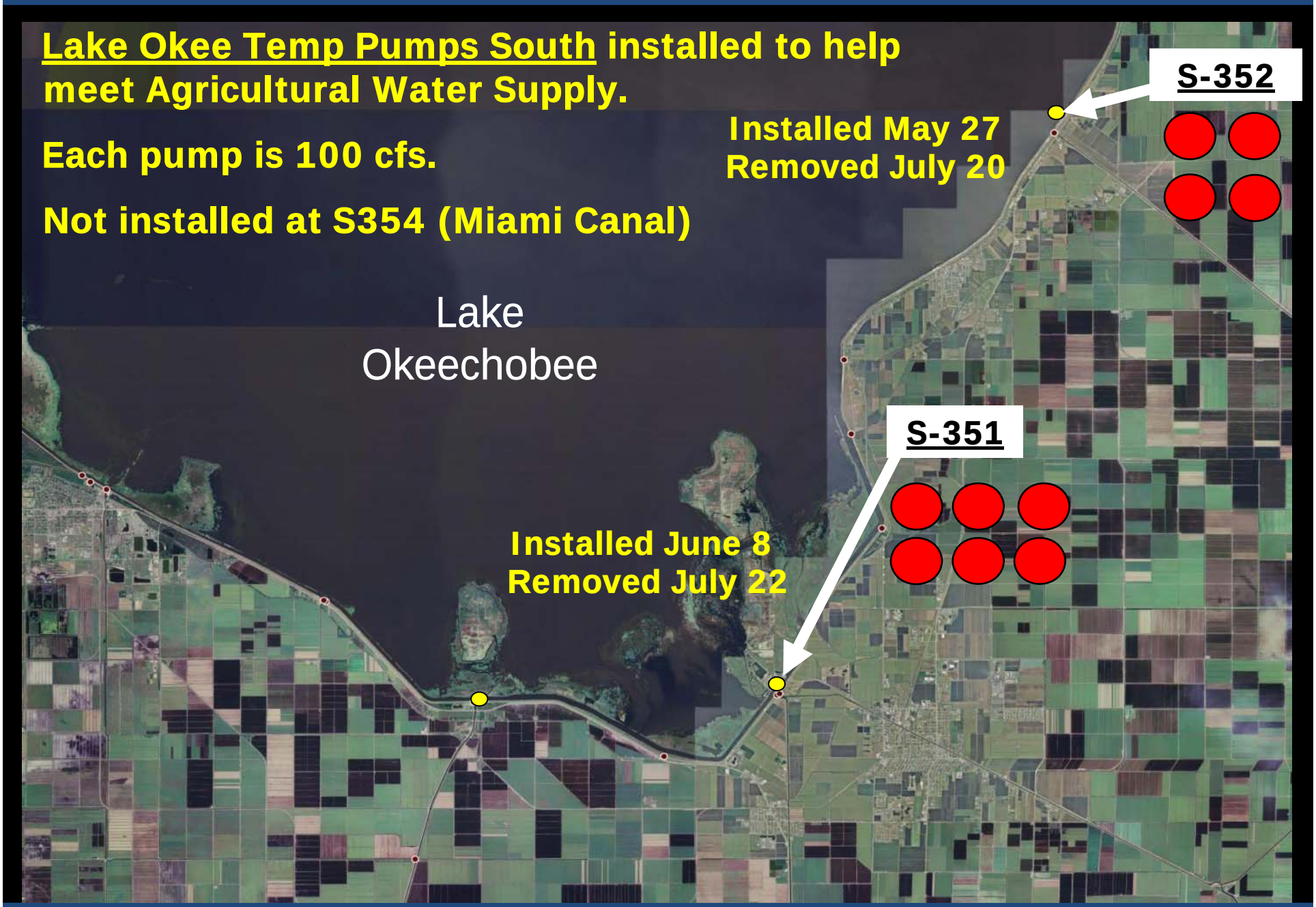
Anthony Artusa, NOAA/NWS/NCEP/CPC

Average Storage in Lakes and Water Conservation Areas



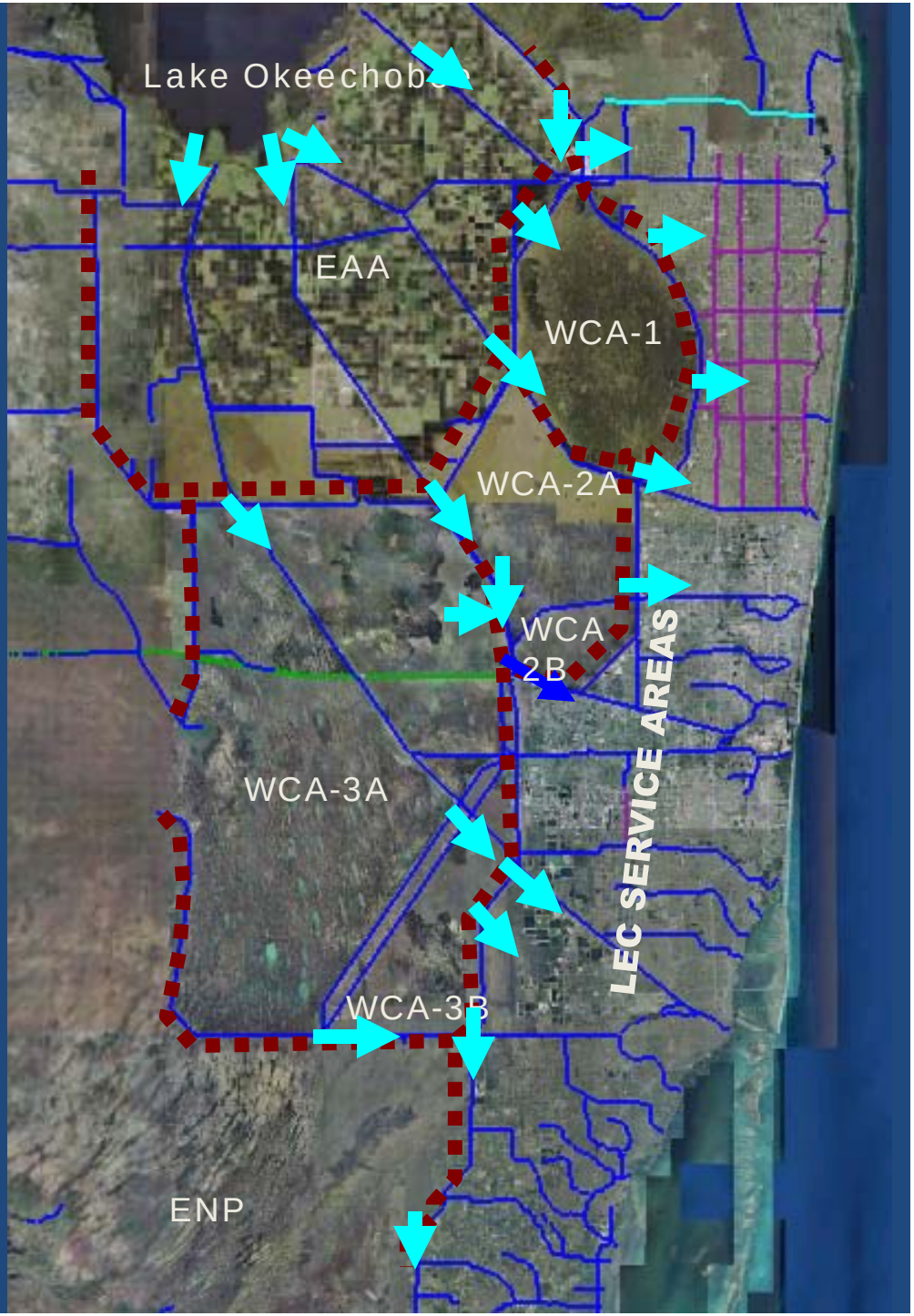
Lake Okeechobee Water Level Comparison




Lake Okee Temp Pumps South installed to help meet Agricultural Water Supply.
Each pump is 100 cfs.
Not installed at S354 (Miami Canal)
Lake Okeechobee
S-352
Installed May 27
Removed July 20
S-351
Installed June 8
Removed July 22

Regional System Supplemental Water Supply

- Everglades Agricultural Area
  - Lake Okeechobee
- Lower East Coast Service Areas
  - WCAs
  - Lake Okeechobee
- Everglades National Park
  - WCAs
  - Lake Okeechobee

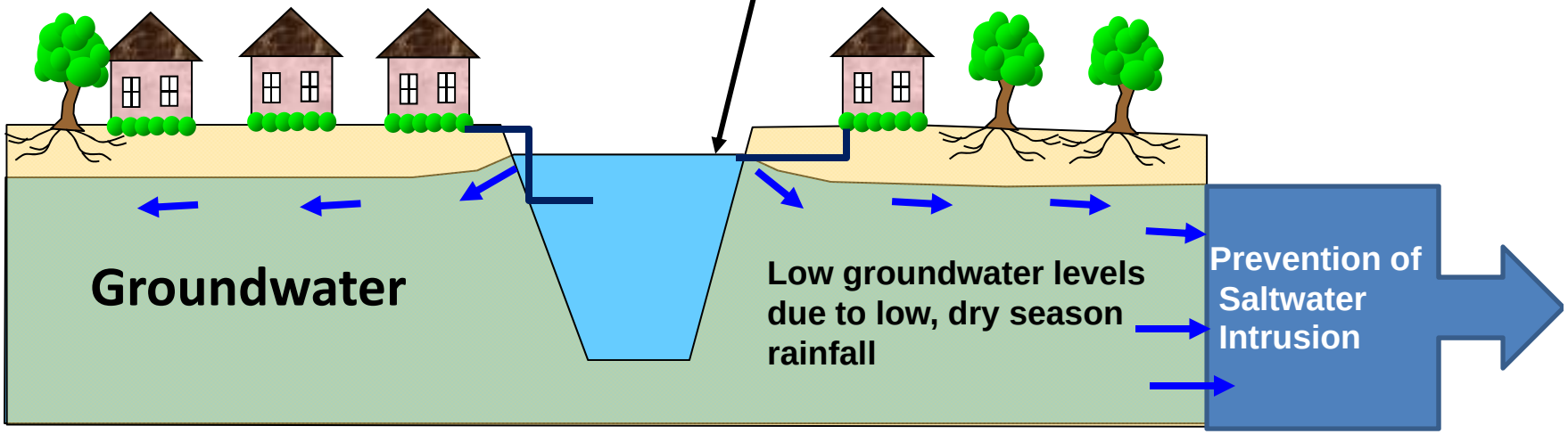


Canal / Groundwater Interaction

Normal Dry Season Operations

Normal rainfall distributed through the dry season months.
Water is supplemented from WCAs.

Canal stages facilitate groundwater recharge and assist supplemental irrigation.

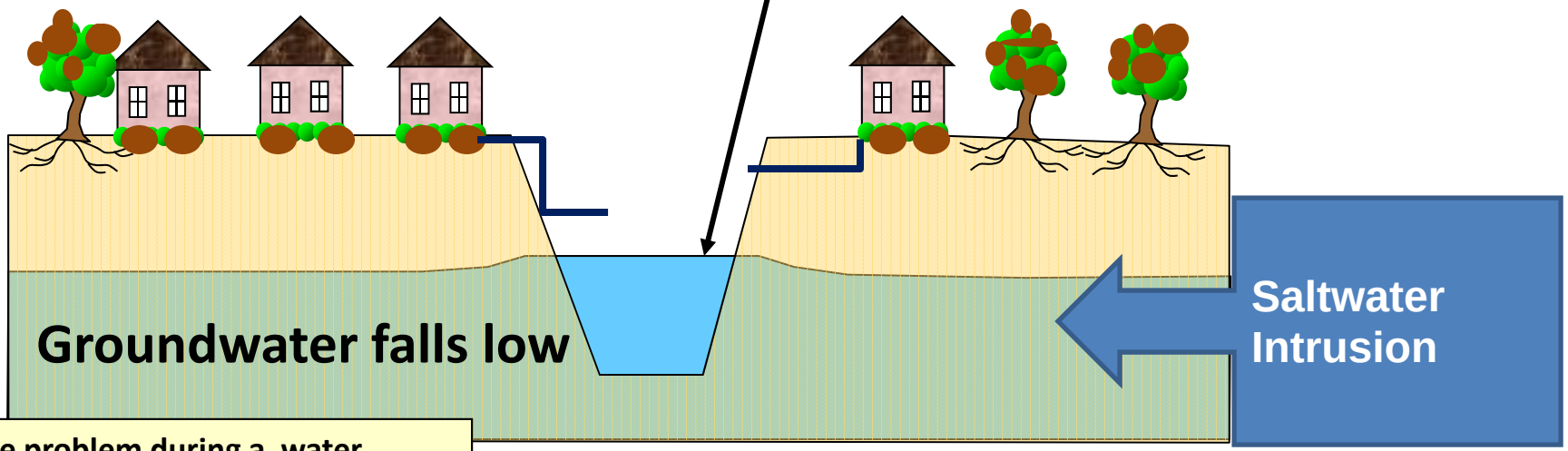


Canal / Groundwater Interaction

Water Shortage Management Operations

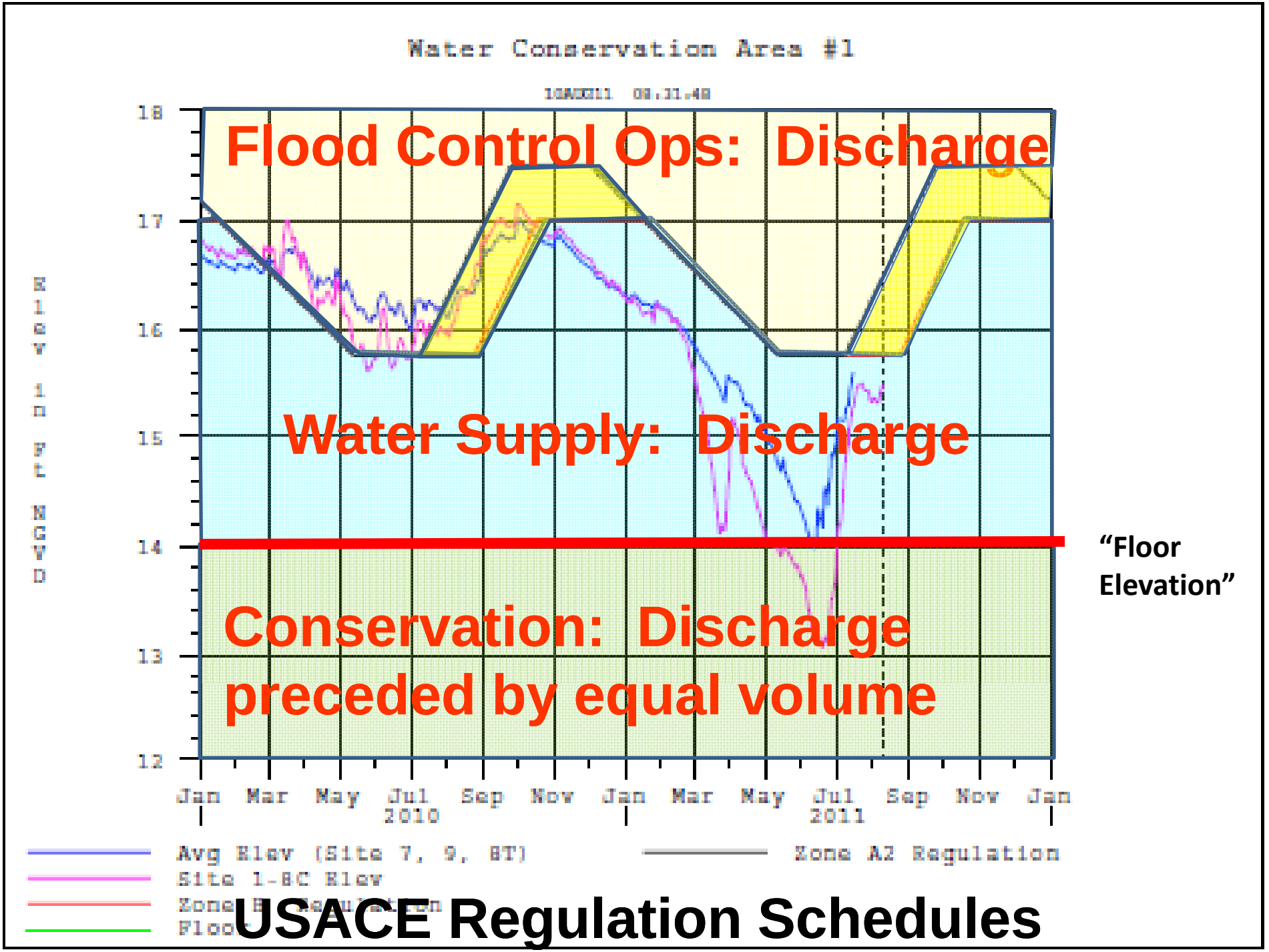
Landscape irrigation is restricted. Water may not be able to be brought from Lk Oke or WCAs.

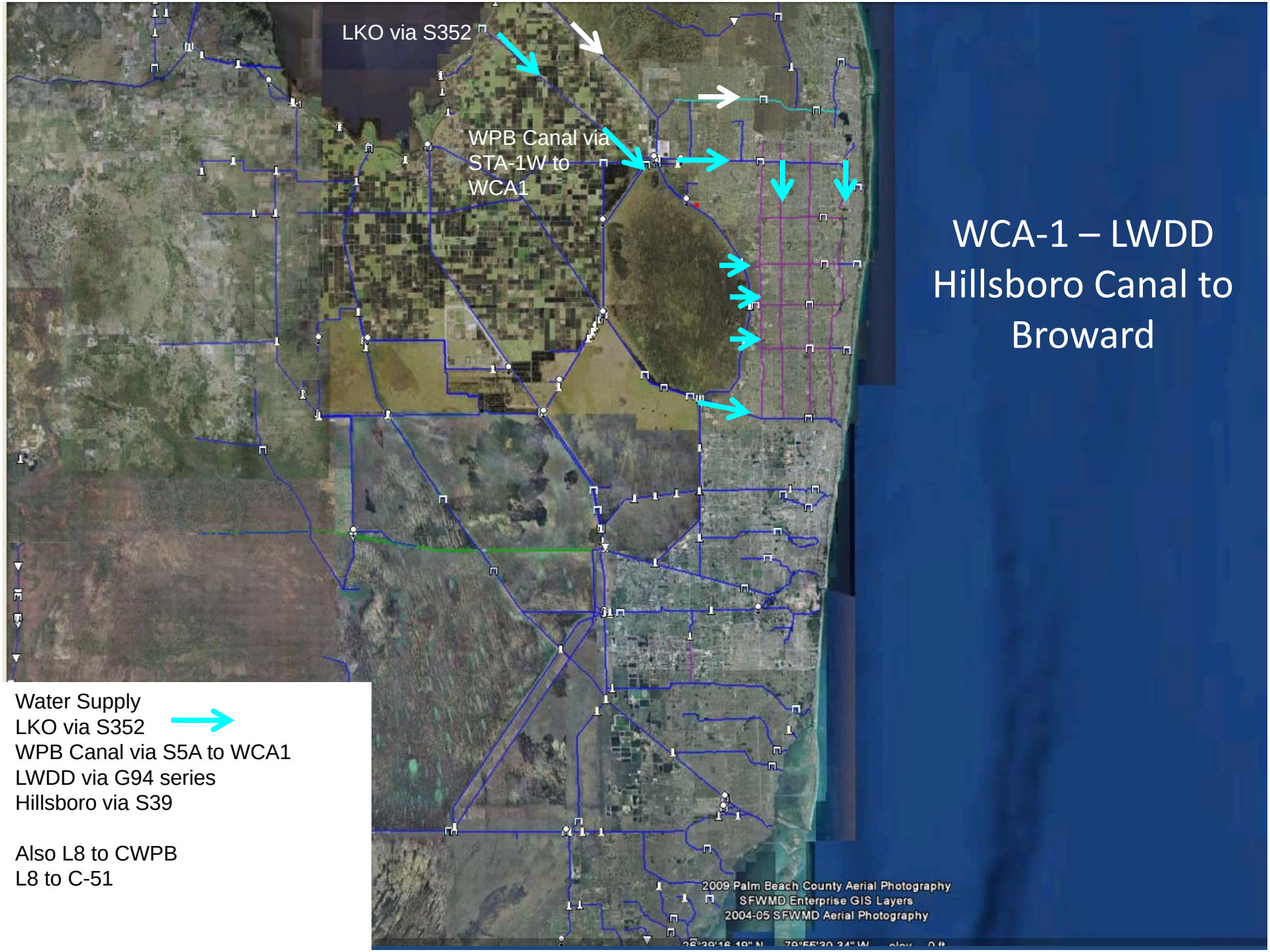
Canal stages cannot be held up. Little groundwater recharge.

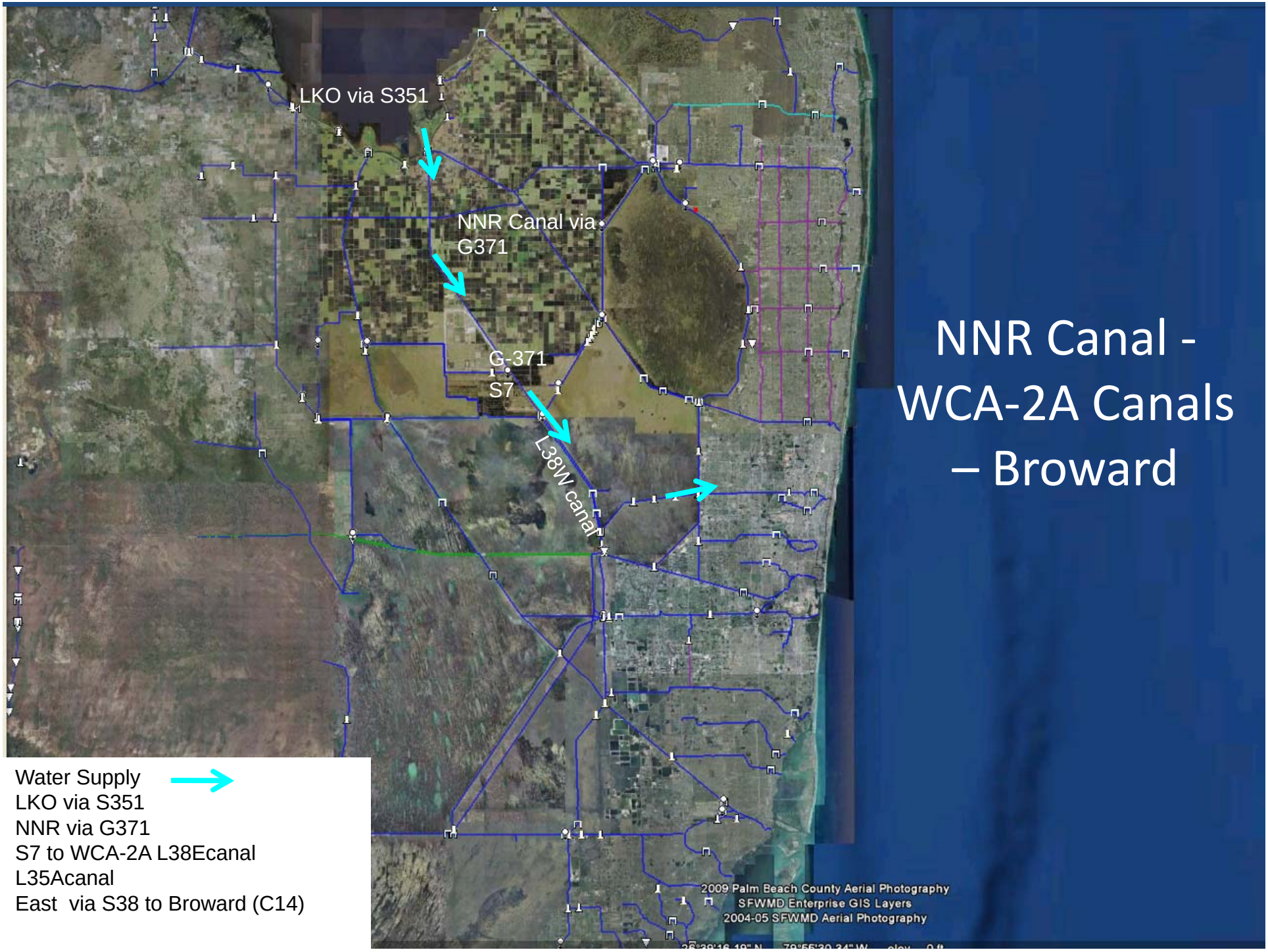


**** The problem during a water shortage is that there can be a significant decrease in regional groundwater levels.**

Canal stages fall much lower than desirable. Saltwater intrusion can become a concern.

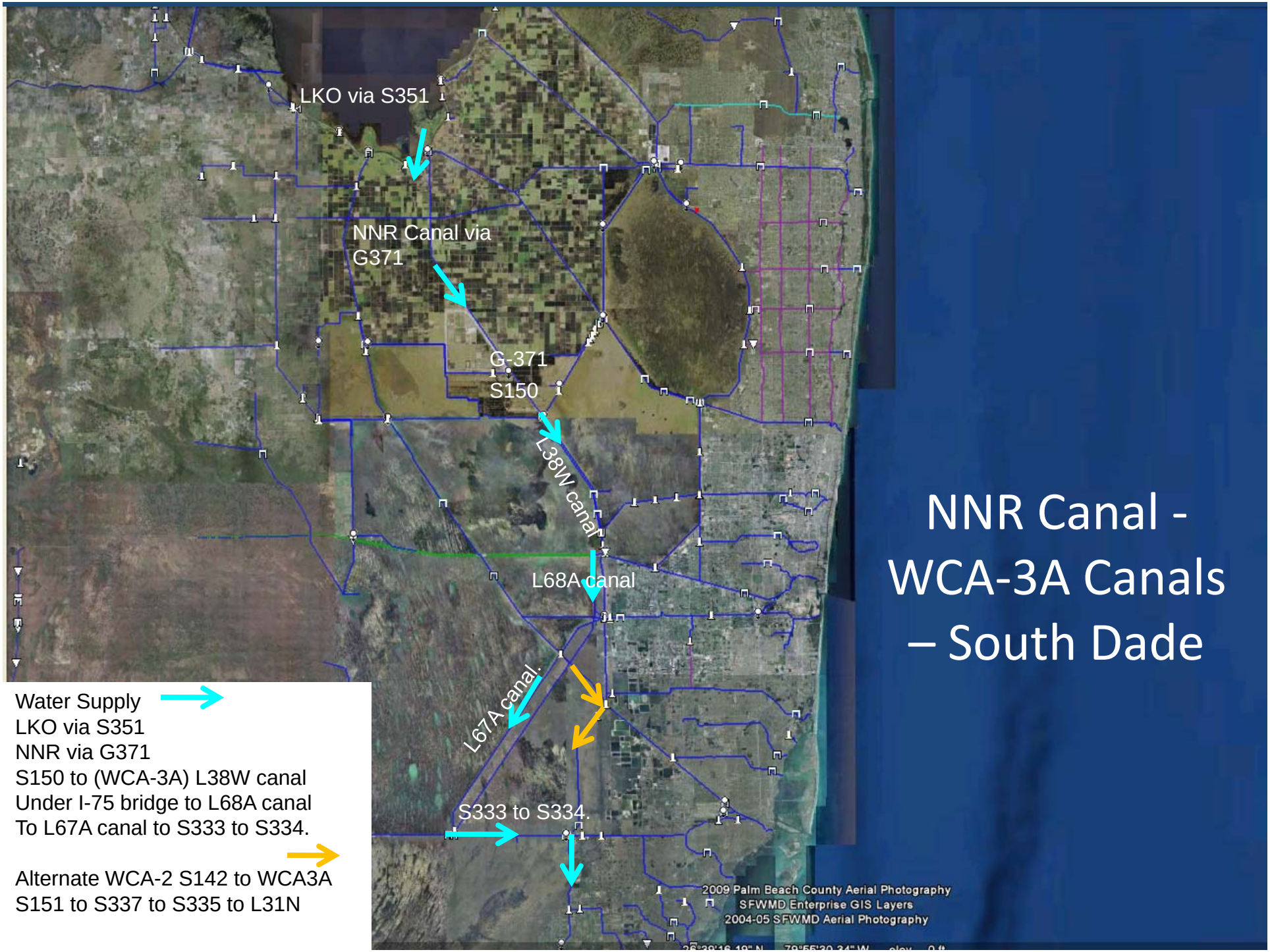

Water Conservation Area #1
Flood Control Ops: Discharge
Water Supply: Discharge
Conservation: Discharge preceded by equal volume
"Floor Elevation"
Elev in Ft NGVD
18
17
16
15
14
13
12
Jan Mar May Jul Sep Nov Jan Mar May Jul Sep Nov Jan
2010
2011
Avg Elev (Site 7, 9, BT)
Site 1-8C Elev
Zone A2 Regulation
USACE Regulation Schedules


LKO via S352
WPB Canal via STA-1W to WCA1
WCA-1 – LWDD Hillsboro Canal to Broward
Water Supply
LKO via S352
WPB Canal via S5A to WCA1
LWDD via G94 series
Hillsboro via S39
Also L8 to CWPB
L8 to C-51
2009 Palm Beach County Aerial Photography
SFWMD Enterprise GIS Layers
2004-05 SFWMD Aerial Photography



NNR Canal - WCA-2A Canals – Broward

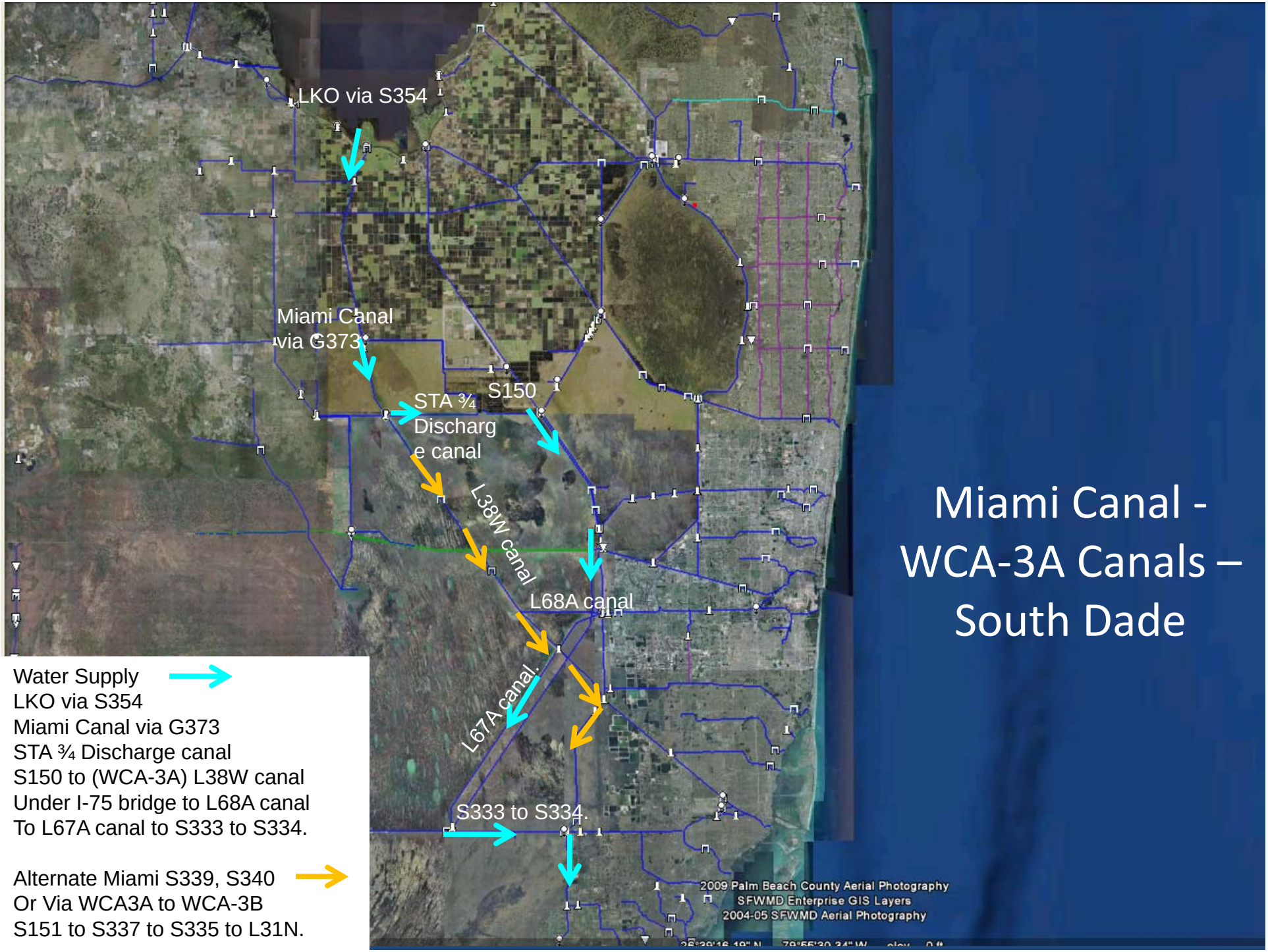
Water Supply →
LKO via S351
NNR via G371
S7 to WCA-2A L38Ecanal
L35Acanal
East via S38 to Broward (C14)



NNR Canal - WCA-3A Canals – South Dade

Water Supply
LKO via S351
NNR via G371
S150 to (WCA-3A) L38W canal
Under I-75 bridge to L68A canal
To L67A canal to S333 to S334.

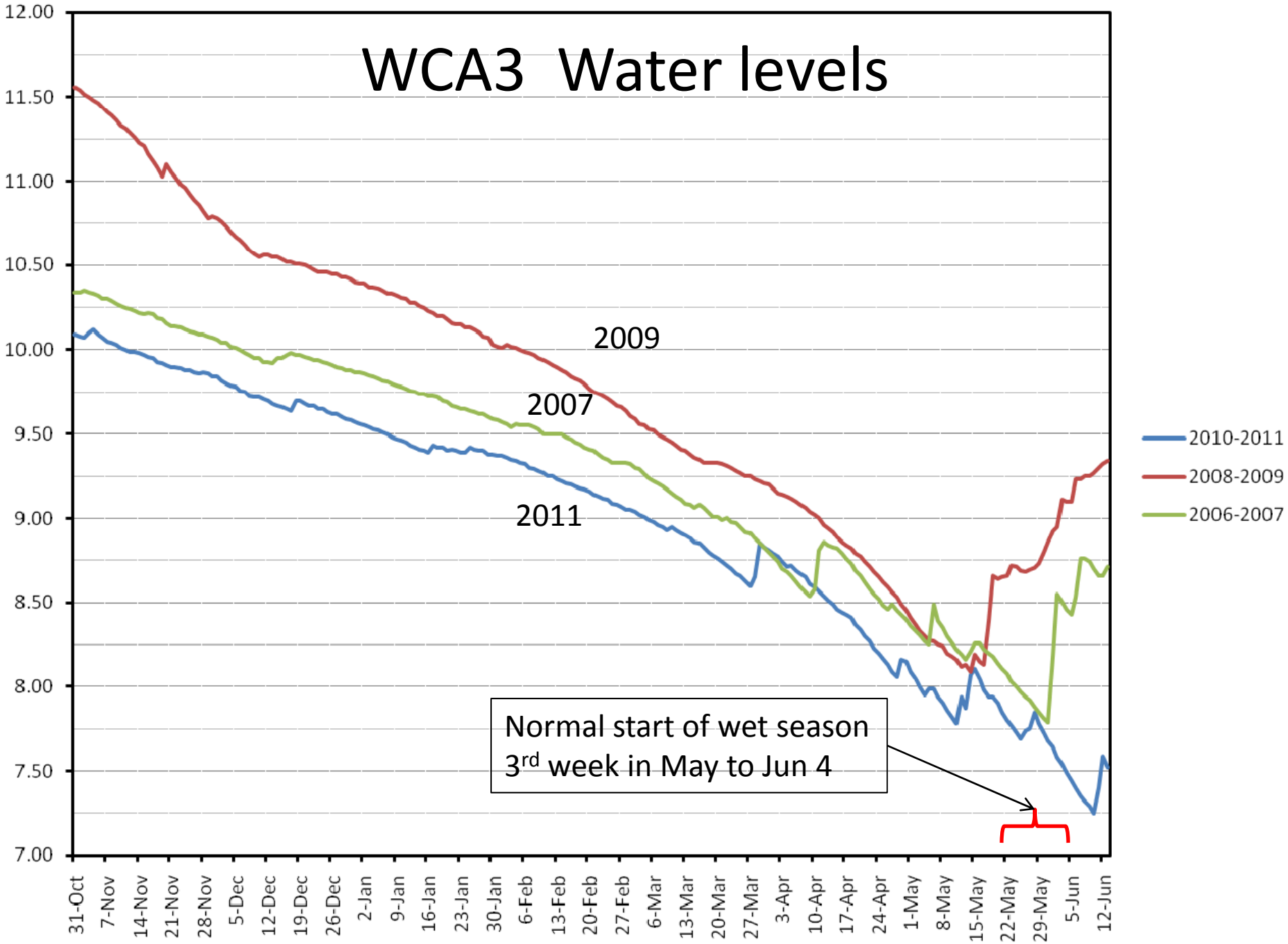
Alternate WCA-2 S142 to WCA3A
S151 to S337 to S335 to L31N

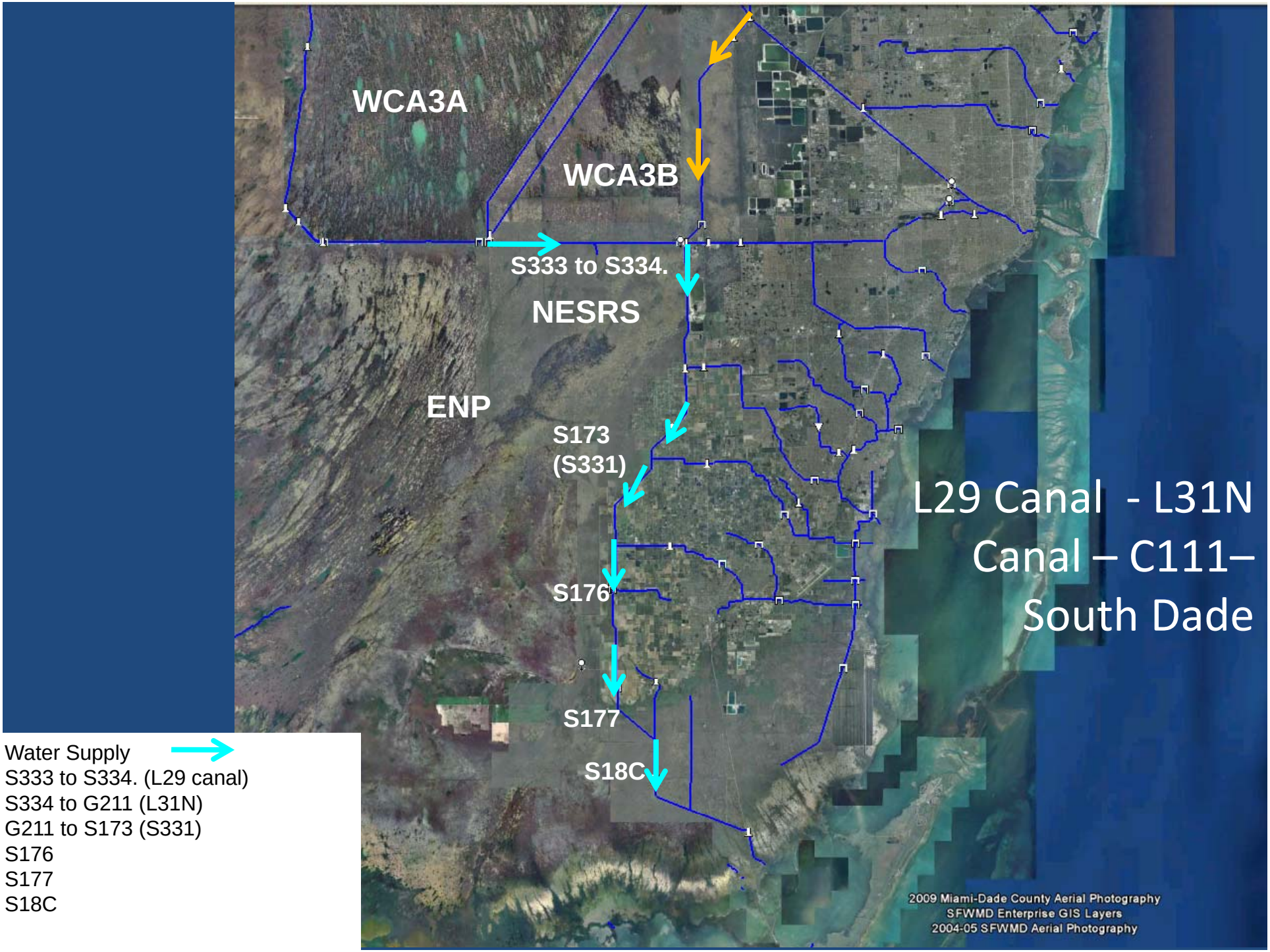


Miami Canal - WCA-3A Canals – South Dade

Water Supply
LKO via S354
Miami Canal via G373
STA ¾ Discharge canal
S150 to (WCA-3A) L38W canal
Under I-75 bridge to L68A canal
To L67A canal to S333 to S334.

Alternate Miami S339, S340
Or Via WCA3A to WCA-3B
S151 to S337 to S335 to L31N.


WCA3 Water levels
12.00
11.50
11.00
10.50
10.00
9.50
9.00
8.50
8.00
7.50
7.00
2009
2007
2011
Normal start of wet season
3rd week in May to Jun 4
31-Oct
7-Nov
14-Nov
21-Nov
28-Nov
5-Dec
12-Dec
19-Dec
26-Dec
2-Jan
9-Jan
16-Jan
23-Jan
30-Jan
6-Feb
13-Feb
20-Feb
27-Feb
6-Mar
13-Mar
20-Mar
27-Mar
3-Apr
10-Apr
17-Apr
24-Apr
1-May
8-May
15-May
22-May
29-May
5-Jun
12-Jun
2010-2011
2008-2009
2006-2007



Water Supply →
S333 to S334. (L29 canal)
S334 to G211 (L31N)
G211 to S173 (S331)
S176
S177
S18C

The water supply elevations that prompt deliveries for the ENP-South Dade Conveyance System on are shown below:

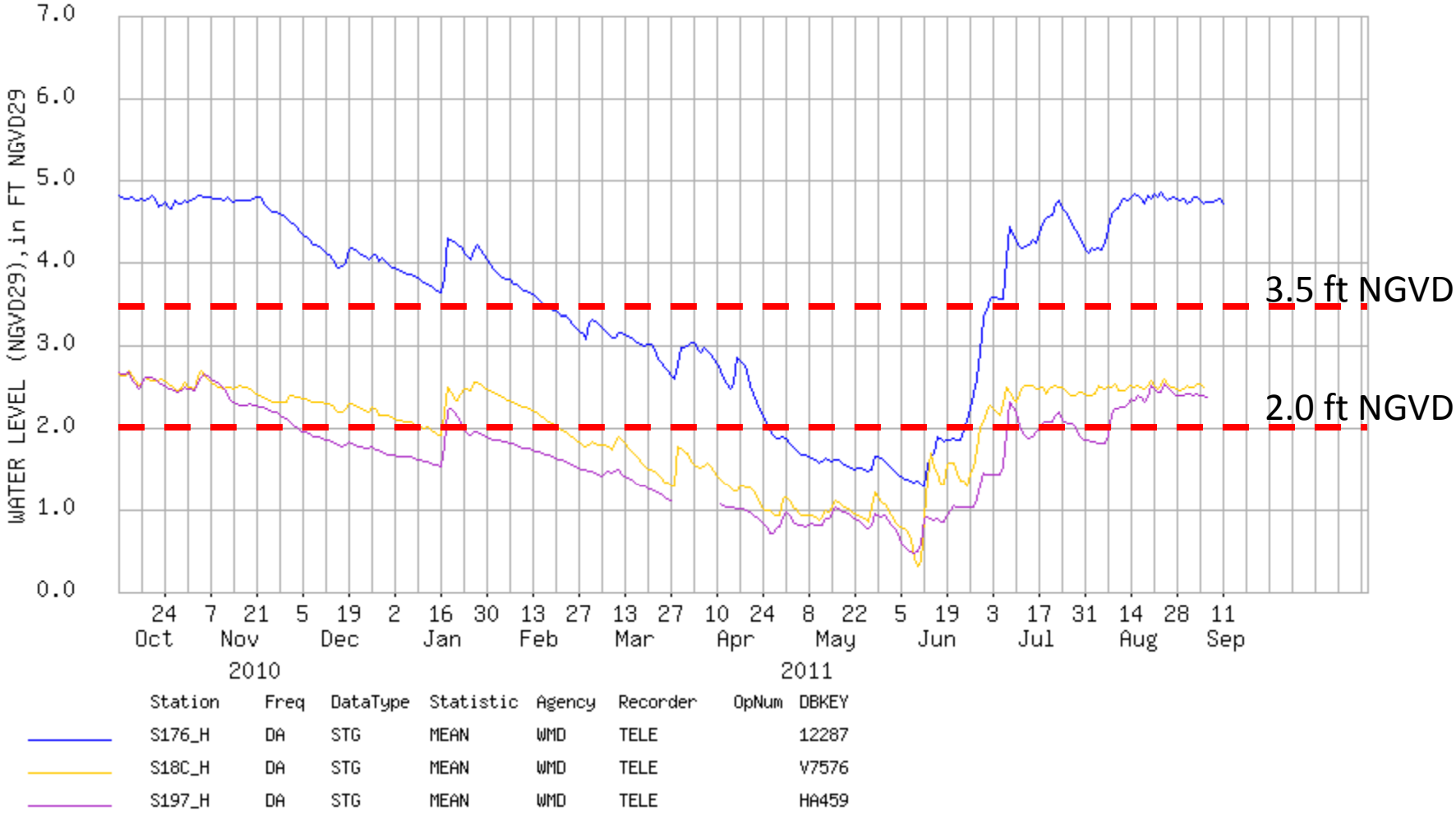
Water Supply Design

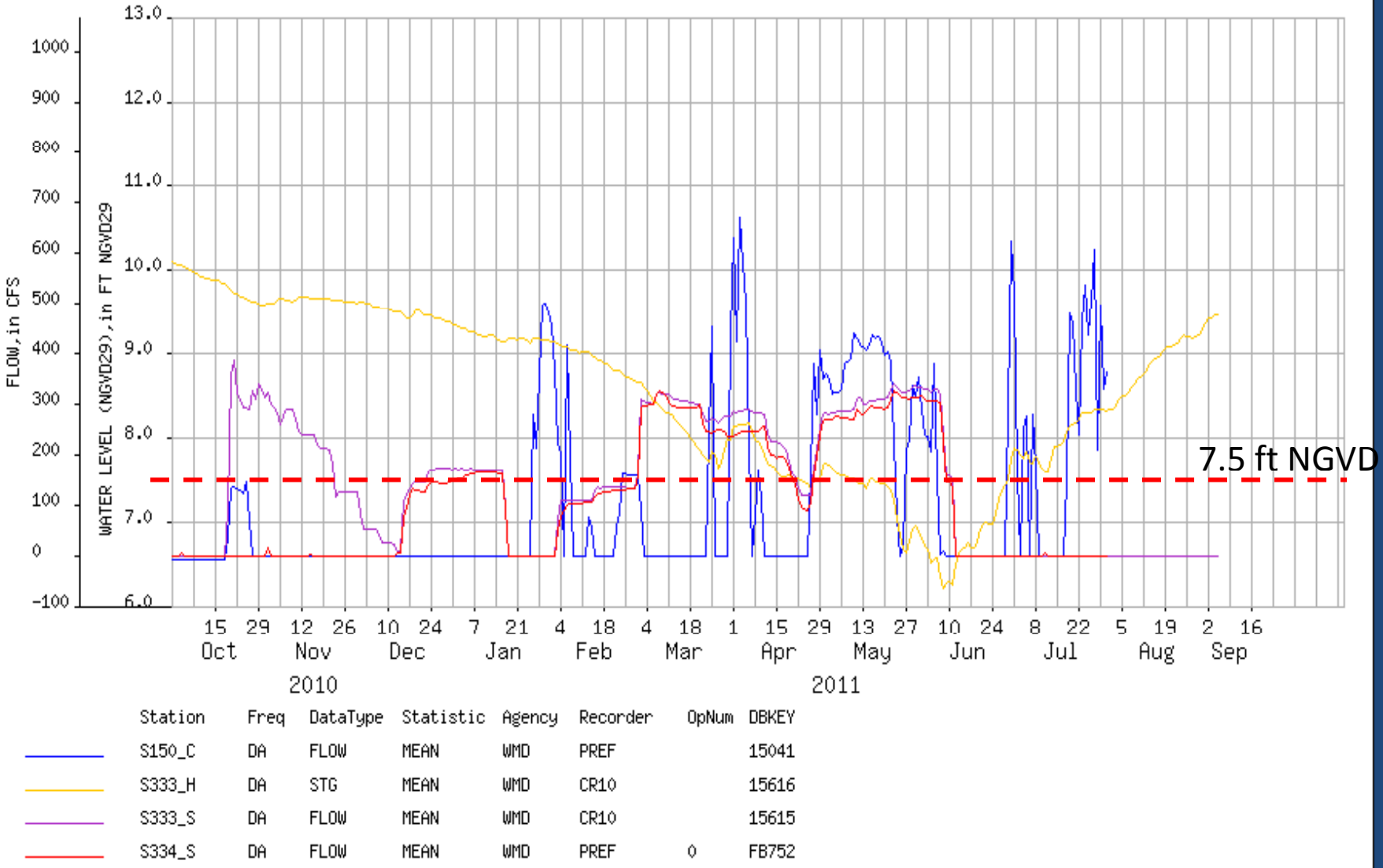
Structure	Canal	HW
S-176	L31 (N) to C-111	3.5*
S-177	C-111	3.0*
S-18C	C-111	2.0*
S-197	C-111	---

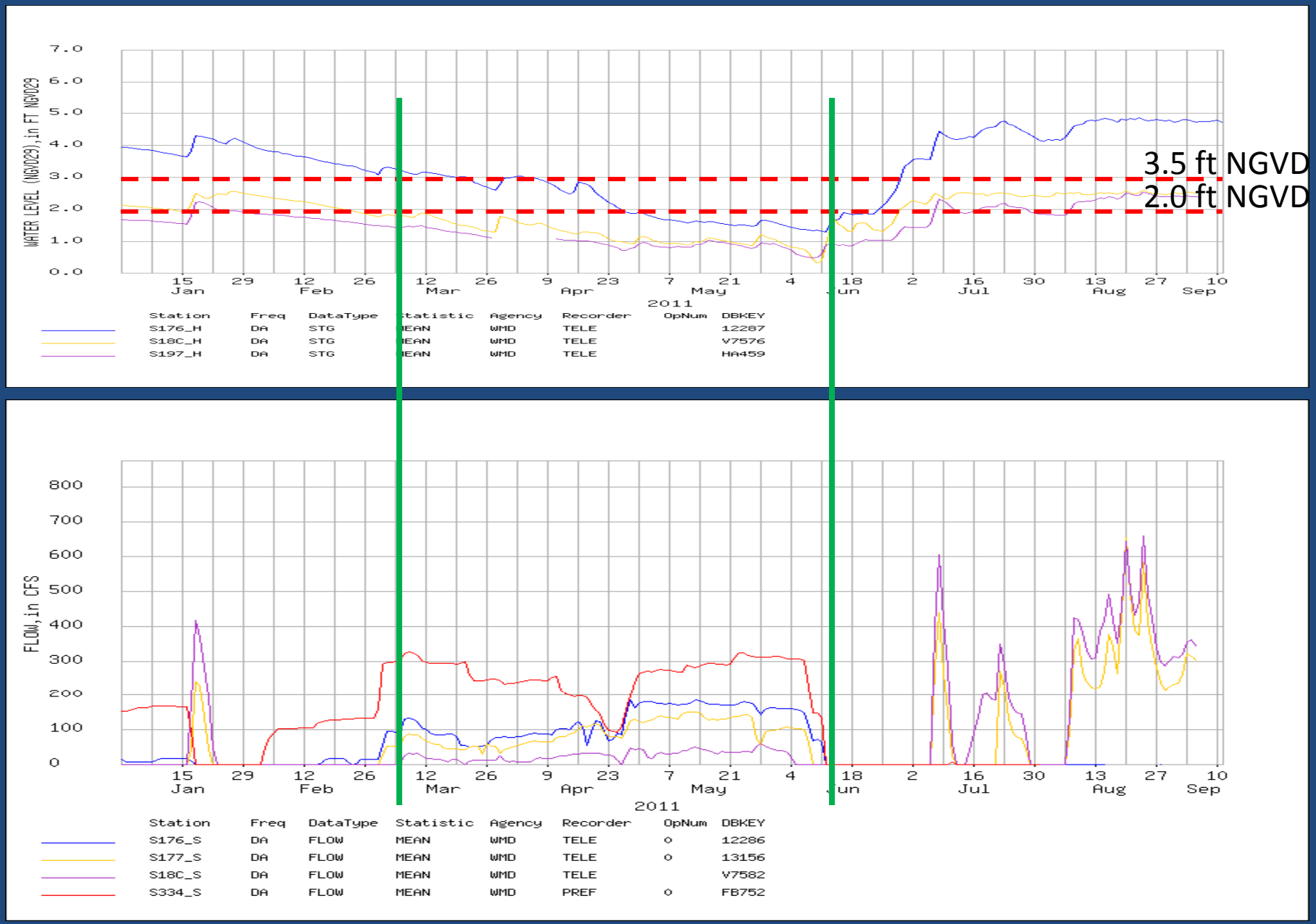
* It is recognized that while the elevation prompts the water supply, that it may not be possible to supply enough water to keep the elevation from falling lower.

Source: Table 7-5; USACE Master Water Control Manual – WCAs – ENP – SDCS (June 1996)

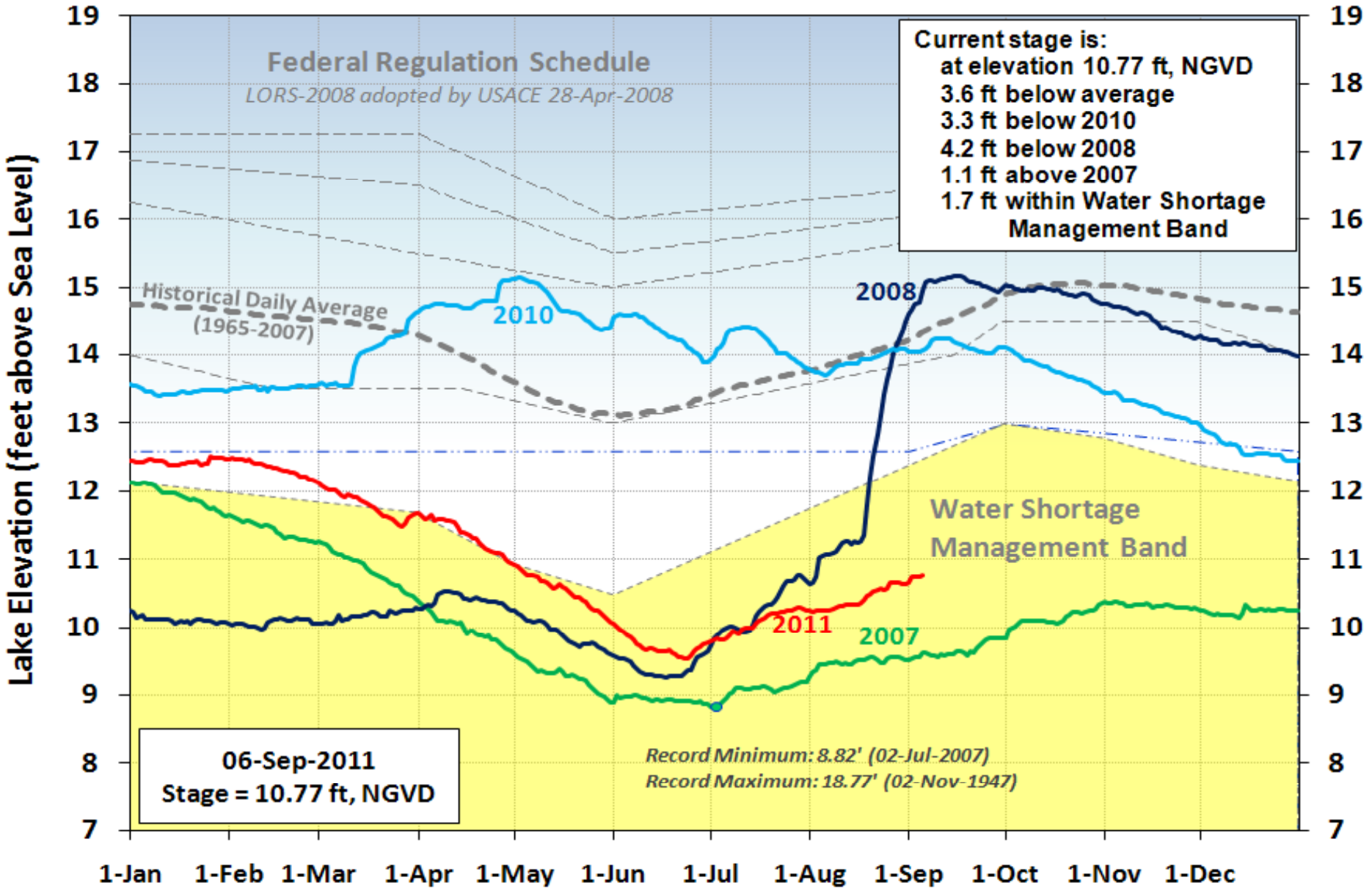
Canal Levels @ S176 HW, S18C HW, S197 HW

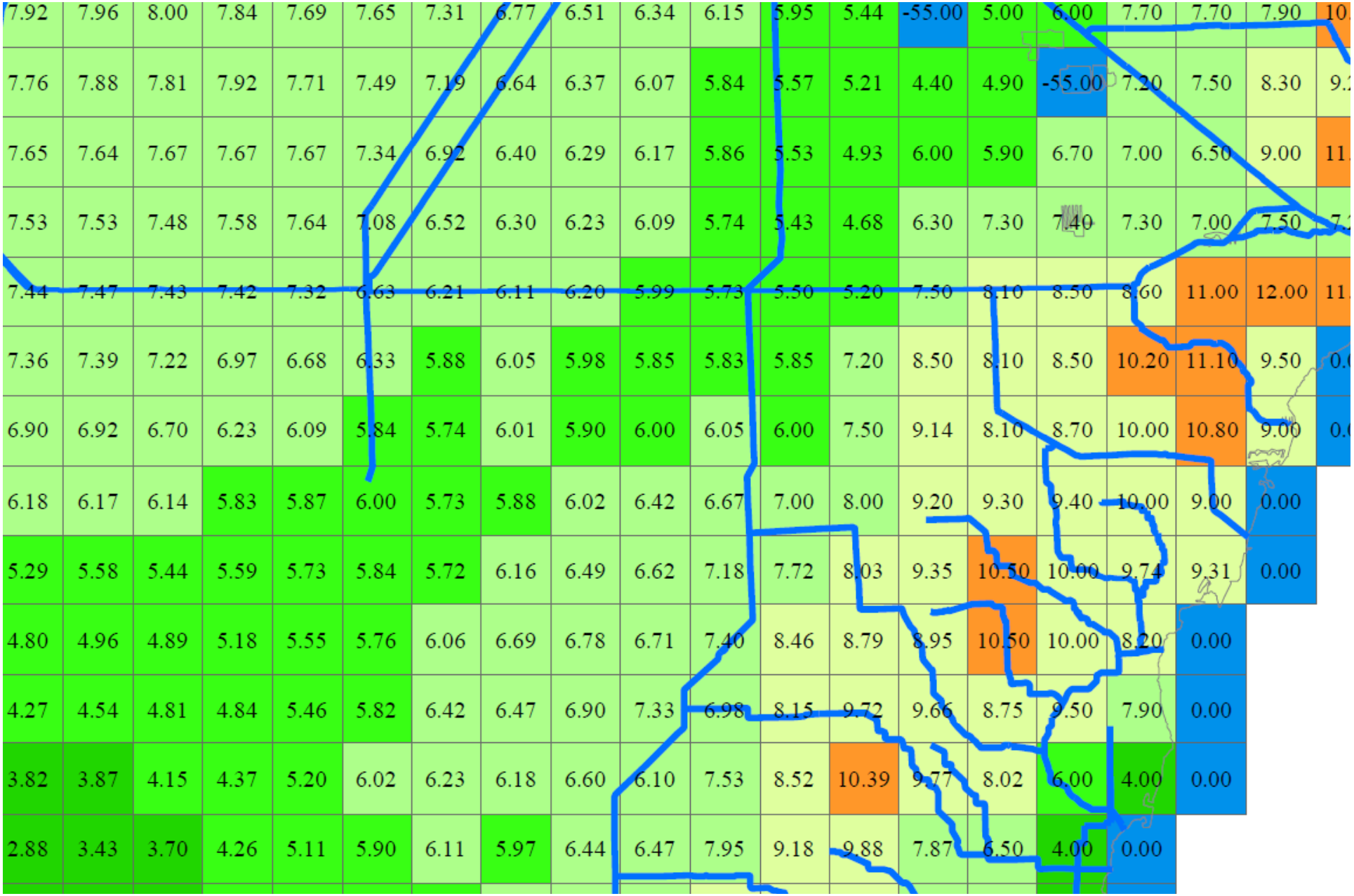



FLOW,in CFS
WATER LEVEL (NGVD29),in FT NGVD29
1000
900
800
700
600
500
400
300
200
100
0
-100
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
7.5 ft NGVD
15 29 12 26 10 24 7 21 4 18 4 18 1 15 29 13 27 10 24 8 22 5 19 2 16
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
2010
2011
Station Freq DataType Statistic Agency Recorder OpNum DBKEY
S150_C DA FLOW MEAN WMD PREF 15041
S333_H DA STG MEAN WMD CR10 15616
S333_S DA FLOW MEAN WMD CR10 15615
S334_S DA FLOW MEAN WMD PREF 0 FB752


WATER LEVEL (NGVD29),in FT NGVD29
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
3.5 ft NGVD
2.0 ft NGVD
15 Jan
29
12 Feb
26
12 Mar
26
9 Apr
23
7 May
21
4 Jun
18
2 Jul
16
30
13 Aug
27
10 Sep
2011
Station Freq DataType Statistic Agency Recorder OpNum DBKEY
S176_H DA STG MEAN WMD TELE 12287
S18C_H DA STG MEAN WMD TELE V7576
S197_H DA STG MEAN WMD TELE HA459
FLOW,in CFS
800
700
600
500
400
300
200
100
0
15 Jan
29
12 Feb
26
12 Mar
26
9 Apr
23
7 May
21
4 Jun
18
2 Jul
16
30
13 Aug
27
10 Sep
2011
Station Freq DataType Statistic Agency Recorder OpNum DBKEY
S176_S DA FLOW MEAN WMD TELE o 12286
S177_S DA FLOW MEAN WMD TELE o 13156
S18C_S DA FLOW MEAN WMD TELE V7582
S334_S DA FLOW MEAN WMD PREF o FB752

Lake Okeechobee Water Level Comparison





South Florida Water Management Model v5.0 Topograp


7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
Elev (FT-NGVD)
GSE 5.83 - 6.05ft NGVD
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
2011
S333 ELEV-TAIL
GSE NSRS 5.83 - 6.05ft NGVD


Questions