Water Conservation Area Regulation Schedules

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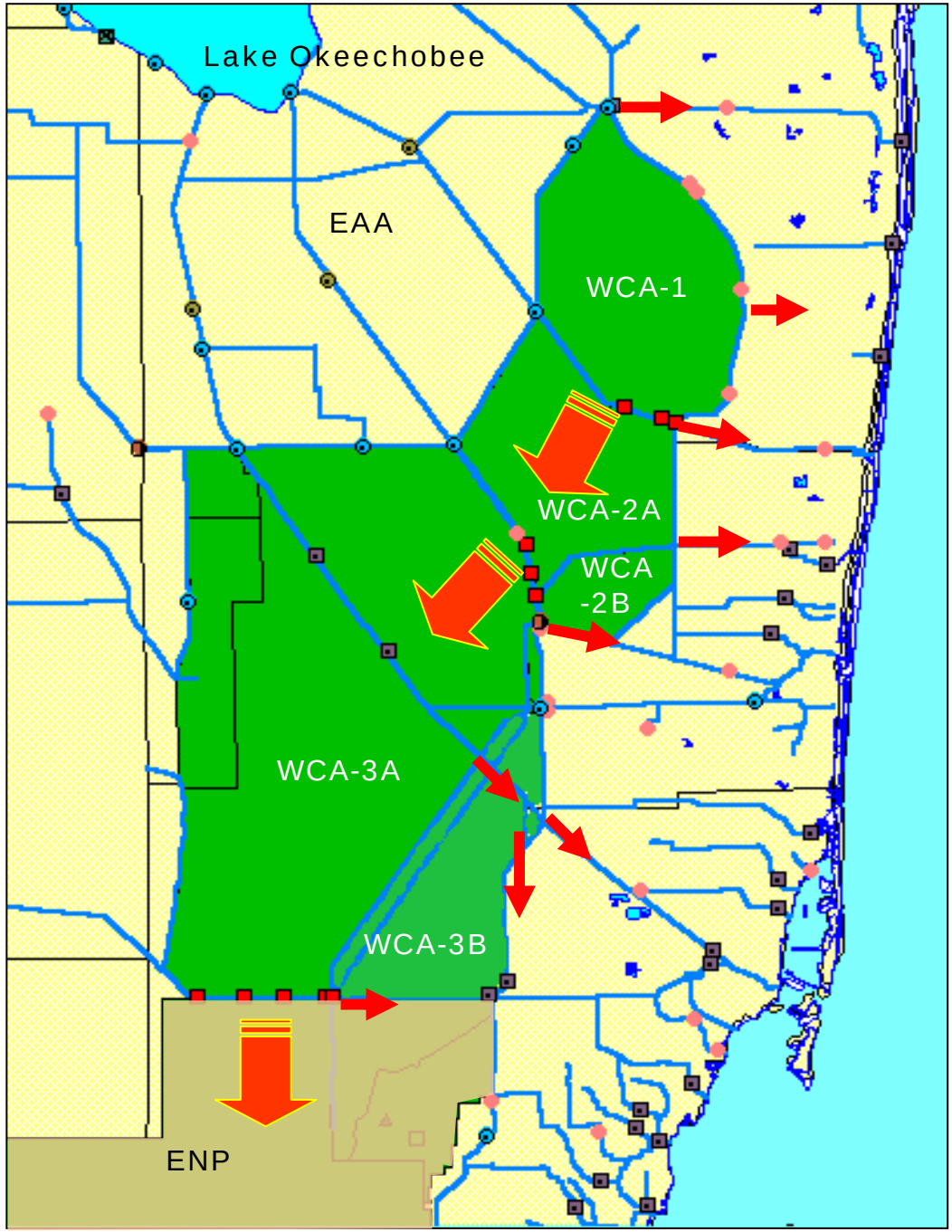
Water Conservation Areas (WCAs)

WCA	Area(mi^2)
1	221
2A	173
2B	37
3A	787
3B	128
Total	1346

- ENP area is 2344 mi^2
- WCA area is approximately 36% of the total WCA & ENP area (3690 mi^2)



Multiple Purposes of the Water Conservation Areas

Water Conservation Areas - General.

The functions of the WCAs as approved in the 1948 and 1954 authorizations were considered to be (1) to act as a depository for excess water from the agricultural areas; (2) to provide the levees necessary to prevent Everglades floodwaters from inundating the east coast; (3) to aid in recharging underground freshwater reservoirs; (4) to provide a water supply for east coast agricultural lands; (5) to benefit fish and wildlife in the Everglades; and (6) to release excess water to Everglades National Park and water from storage to assist in restoring and maintaining natural conditions.

(C&SF Project, USACE Master Water Control Manual for the WCAs, ENP and ENP-SDCS, Volume 4 (June 1996) Sec. 3-02b., p3-3)

What is a regulation schedule?

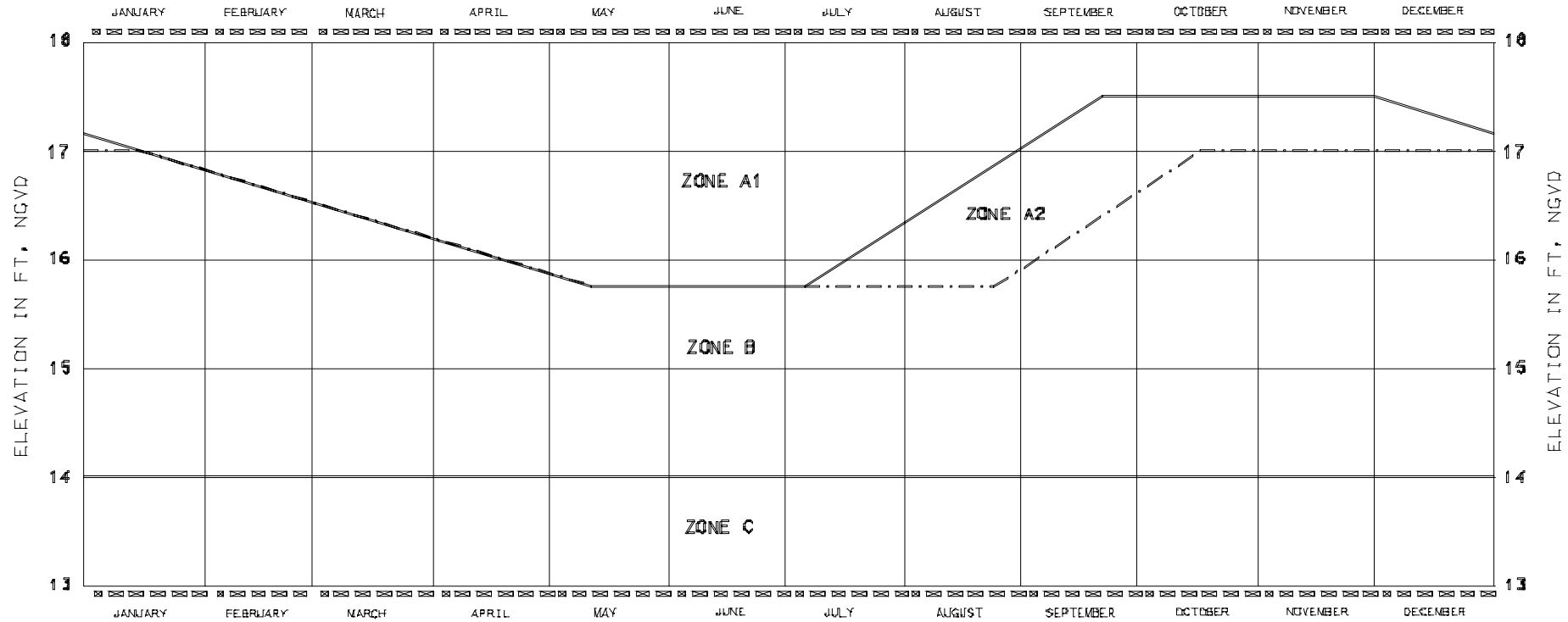
- A regulation schedule is a tool used by water managers to manage the water levels in a lake or reservoir.
- Typically have water level thresholds which vary with time of year and trigger discharges (a.k.a., regulatory releases).
- Regulatory discharges are made primarily to protect the integrity of the surrounding levees and developed areas, and are also made to lower water levels in preparation for wet season inflows.
- For multiple-purpose lakes and reservoirs, regulation schedules are designed to balance competing objectives including water supply, flood control, navigation, and environmental enhancement.

Excerpts from the C&SF Project
USACE Master Water Control Manual
WCAs, ENP and ENP-SDCS
Volume 4 (June 1996) (Sections 1-05 & 1-06.)

- The Jacksonville District, U.S. Army Corps of Engineers operates and maintains the main outlets to WCA Nos. 1, 2 and 3 (as authorized in House Document 643).
- The USACE is responsible for prescribing regulations and key operating criteria for all project works for authorized project purposes.
- The SFWMD and FDEP are responsible for regulating water quality and secondary drainage works.
- The USFWS is responsible for administering the ESA and managing the fish and wildlife resources in the Arthur R. Marshall Loxahatchee National Wildlife Refuge.

Excerpts from the C&SF Project
USACE Master Water Control Manual
WCAs, ENP and ENP-SDCS
Volume 4 (June 1996)

Water Supply releases from WCA's during low water conditions. During low water conditions it is difficult to draw water out of the interior of the WCA's. The regulation schedules for WCA Nos. 1, 2A, and 3A include a minimum canal level (~~11.0ft~~ 14.0ft, 10.5 ft, and 7.5 ft, respectively) below which water releases are not permitted unless water is supplied from another source. (Sec. 3-06e., p3-22)



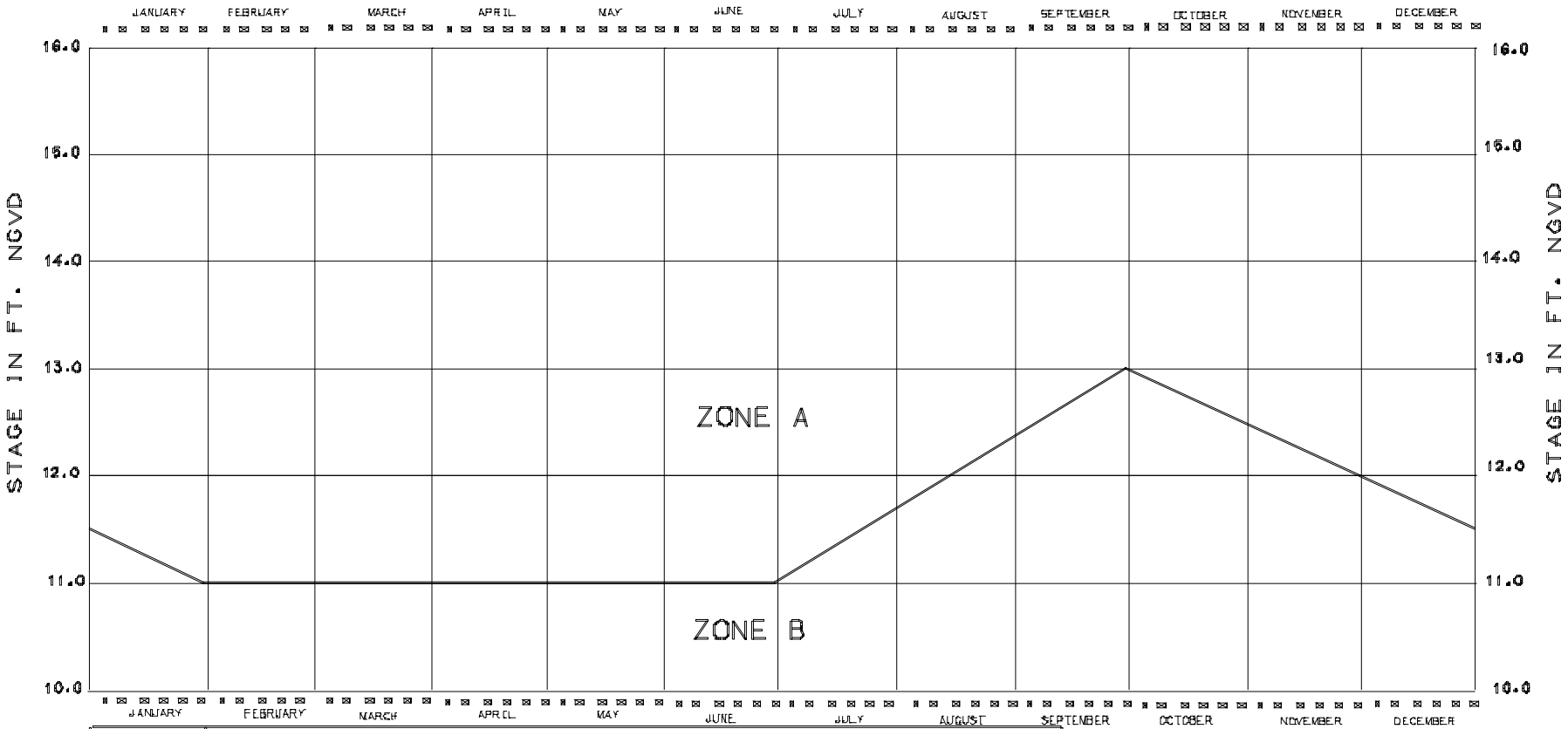
ZONE	RELEASES
A1	UP TO MAXIMUM AT S-10 (AND S-39 WHEN AGREED BETWEEN CORPS AND SFWMD). WATER SUPPLY RELEASES AS NEEDED.
A2	S-10 RELEASES BASED ON CORPS FORECASTS. WATER SUPPLY RELEASES AS NEEDED. IF LAKE OKEECHOBEE STAGE IS ABOVE WCA-1 STAGE OR NO MORE THAN ONE FOOT BELOW WCA-1 STAGE, THEN WATER SUPPLY RELEASES FROM WCA-1 MUST BE PRECEEDED BY AN EQUIVALENT VOLUME OF INFLOW.
B	WATER SUPPLY AS NEEDED. IF LAKE OKEECHOBEE STAGE IS ABOVE WCA-1 STAGE OR NO MORE THAN ONE FOOT BELOW WCA-1 STAGE, THEN WATER SUPPLY RELEASES FROM WCA-1 MUST BE PRECEEDED BY AN EQUIVALENT VOLUME OF INFLOW.
C	NO NET RELEASES FROM WCA-1. ANY WATER SUPPLY RELEASES MUST BE PRECEEDED BY AN EQUIVALENT VOLUME OF INFLOW.

DATES	USE GAGE	CONDITIONS
1 JAN - 30 JUN	1-8 CANAL	ALL
1 JUL - 31 DEC	1-8 CANAL	EXCEPT AS NOTED BELOW
	AVG. 1-7, 1-8T, 1-8	DURING RISING STAGES WHEN CANAL STAGE EXCEEDS AVERAGE.

CENTRAL AND SOUTHERN FLORIDA
INTERIM REGULATION SCHEDULE

WATER CONSERVATION AREA NO. 1

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
DATED: 03 MAY 1995



ZONE	RELEASES THROUGH OUTLETS AS INDICATED
A	UP TO MAXIMUM CAPACITY AT S-11; MAXIMUM CAPACITY AT S-144, 145, & 146; MAXIMUM PRACTICABLE AT S-143 & S-38 WHEN REQUESTED BY THE CORPS OF ENGINEERS BUT NOT TO EXCEED 11.0 FT., NGVD, IN POOL 2B. L-35B & L-38 BORROW CANALS SHOULD NOT BE DRAWN DOWN BELOW 10.5 FT., NGVD.
B	WATER SUPPLY. L-35B & L-38 BORROW CANAL SHOULD NOT BE DRAWN DOWN BELOW 10.5 FT., NGVD, UNLESS WATER IS SUPPLIED FROM ANOTHER SOURCE.

INDICATOR GAGES FOR REGULATION WILL BE AS FOLLOWS:

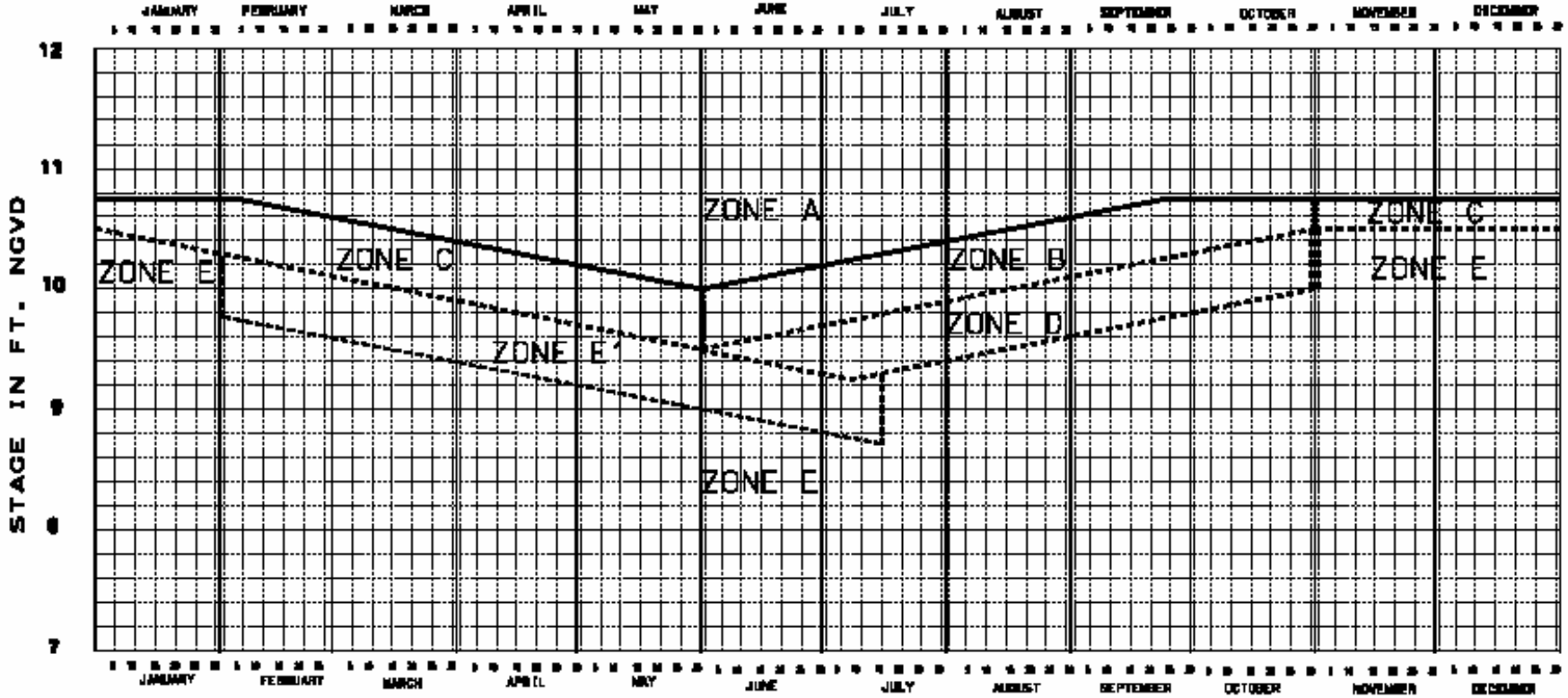
DATE	USE GAGE	CONDITIONS
1 JAN – 31 JAN	2-17	IF 2-17 STAGE RECEDES TO 11.5 FEET, NGVD SWITCH TO S-118 HEADWATER GAGE.
1 FEB – 30 JUN	S-118	ALL
1 JUL – 31 DEC	2-17	ALL

CENTRAL AND SOUTHERN FLORIDA
INTERIM REGULATION SCHEDULE

WATER CONSERVATION AREA NO. 2A

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT
CORPS OF ENGINEERS, JACKSONVILLE, FLORIDA

PROPOSED 3/28/88
COORDINATED 6/21/89



ZONE	DESCRIPTION
A	FLOOD RELEASES
B	UPPER TRANSITION, WET SEASON
C	UPPER TRANSITION, DRY SEASON
D	LOWER TRANSITION
E	RAINFALL FORMULA

ZONE	DESCRIPTION
E1	MAKE MAXIMUM PRACTICABLE RELEASES AT S-142, S-151, S-31, S-337, S-335, S-333, S-355 A & B, AND S-334 WHEN PERMITTED BY DOWNSTREAM CONDITIONS. IF THE HEADWATER AT S-333 FALL BELOW 8.25 FT-NGVD, USE ZONE E RULES.

NOTES: 1. ZONE INFORMATION IS DETAILED ON ATTACHED SHEET.
2. THE L-67A BORROW CANAL STAGE SHOULD NOT BE DRAWN DOWN BELOW 7.5 FT-NGVD UNLESS WATER IS SUPPLIED FROM ANOTHER SOURCE.

CENTRAL AND SOUTHERN FLORIDA
INTERIM REGULATION SCHEDULE

INTERIM STRUCTURAL AND OPERATIONAL PLAN 2001

WATER CONSERVATION AREA NO. 3A

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT
CORPS OF ENGINEERS, JACKSONVILLE, FLORIDA

Date revised: November 2000

WCA-3A Regulation Schedule Structure Discharge Rules

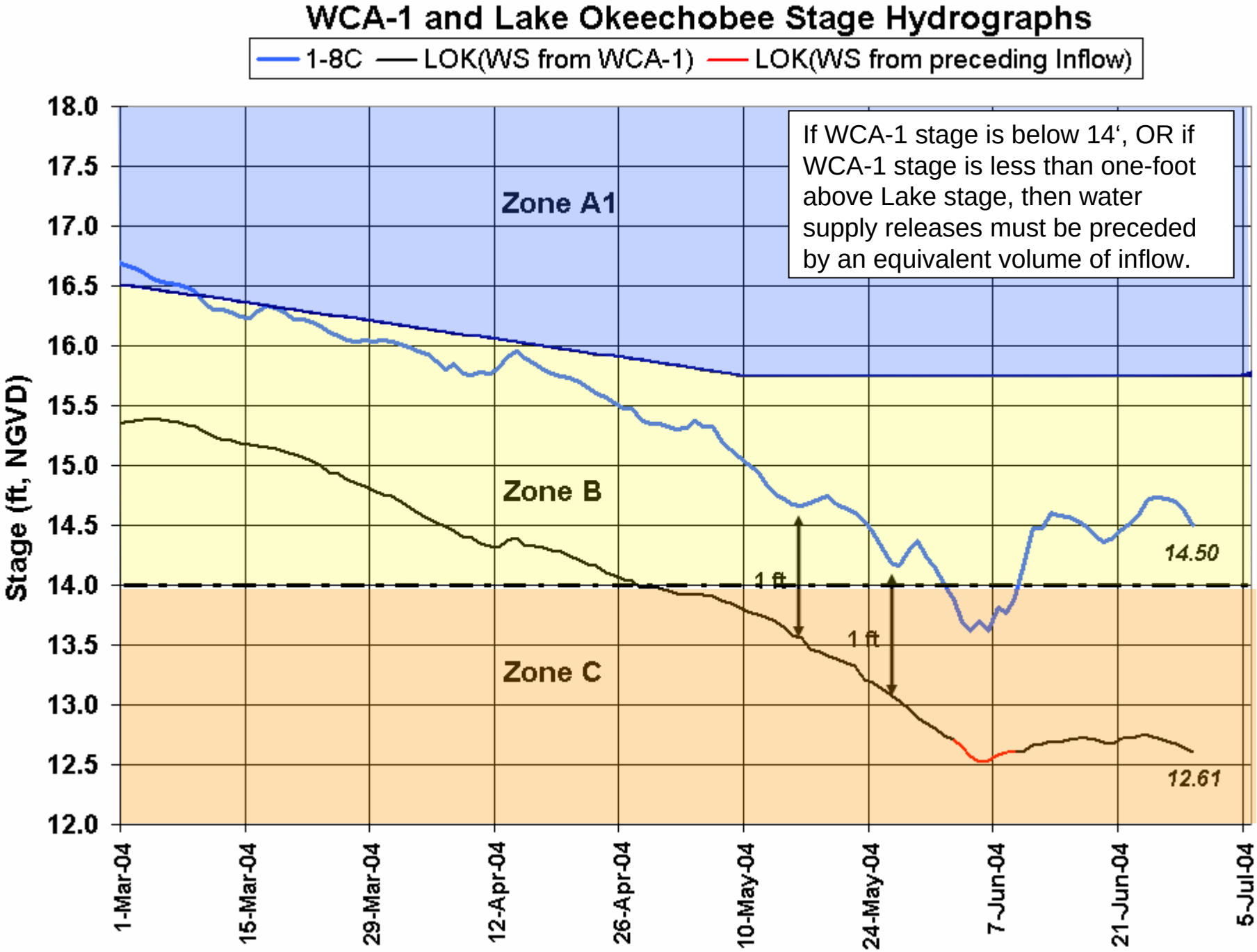
ZONE	S-12	S-333	S-151	S-343A&B, S-344
Zone A	Open full when permitted subject to conditions of note 1 below Zone A is the flood storage pool for WCA-3A, water levels may require the opening of S-12C, S-12B, and/or S-12A during the period 1 Nov – 15 July to avoid an unacceptable risk of failure of WCA-3A levees and structures.	See note 2 and 3 below. Make maximum allowable discharge subject to downstream conditions.	See note 3 below. Maximum allowable discharge when WCA-3B stage is below 8.5 ft-NGVD.	No discharges from 1 Nov – 15 Jul, unless the FWS has determined that nesting for the CSSS sub-population A has ended. If non-nesting season, then make maximum allowable discharges if downstream conditions permit.
Zone B	Discharge 45% of the computed flow for Shark River Slough. From 1 Jun – 15 July, discharges are limited to S-12D, unless the FWS has determined that nesting for the CSSS sub-population A has ended. If S-333 is closed or discharging less than 28% of computed flow for Shark River Slough, S-12 must discharge at least 73% and up to 100% of the computed flow for Shark River Slough, if capacity is available.	See note 2 and 3 below. Discharge 55% of the computed flow for Shark River Slough when permitted by downstream conditions.	See note 3 below. Maximum allowable discharge when WCA-3B stage is below 8.5 ft-NGVD.	Closed from 1 Jun through 15 July, or until the FWS has determined that nesting for the CSSS sub-population A has ended. Otherwise, normally closed in this zone, unless water is needed for environmental reasons.
Zone C	Discharge 45% of the computed flow for Shark River Slough amount. If S-333 is closed or reduced in flow, S-12 can discharge up to 100% of the computed flow for Shark River Slough, if desired by ENP, subject to conditions in note 1 below.	See note 2 and 3 below. Discharge 55% of the computed flow for Shark River Slough when permitted by downstream conditions.	See note 3 below. Maximum allowable discharge when WCA-3B stage is below 8.5 ft-NGVD.	No discharges from 1 Nov – 1 Jun, unless the FWS has determined that nesting for the CSSS sub-population A has ended, then make maximum allowable discharges if no downstream problems.
Zone D	Discharge 45% of the computed flow for Shark River Slough. From 1 Jun – 15 July, discharges are limited to S-12D, unless the FWS has determined that nesting for the CSSS sub-population A has ended. If S-333 is closed or discharging less than 28% of computed flow for Shark River Slough, S-12 must discharge at least 73% and up to 100% of the computed flow for Shark River Slough, if capacity is available.	See note 2 and 3 below. Discharge 55% of the computed flow for Shark River Slough when permitted by downstream conditions.	See note 3 below.	Closed from 1 Jun through 15 July, or until the FWS has determined that nesting for the CSSS sub-population A has ended, S-343A&B, S-344. Otherwise, normally closed in this zone, unless water is needed for environmental reasons.
Zone E	Discharge 45% of the computed flow for Shark River Slough subject to note 1 below. The L-67A Borrow Canal stage should not be drawn down below 7.5 FT-NGVD unless water is supplied from another source.	See note 2 and 3 below. Discharge 55% of the computed flow for Shark River Slough when permitted by downstream conditions. The L-67A Borrow Canal stage should not be drawn down below 7.5 FT-NGVD unless water is supplied from another source.	See note 3 below. The L-67A Borrow Canal stage should not be drawn down below 7.5 FT-NGVD unless water is supplied from another source.	Closed, unless water is needed for environmental reasons. The L-67A Borrow Canal stage should not be drawn down below 7.5 FT-NGVD unless water is supplied from another source.
Zone E1	Discharge 45% of the computed flow for Shark River Slough. From 1 Feb – 15 July, discharges are limited to S-12D, unless the FWS has determined that nesting for the CSSS sub-population A has ended. Revert to Zone E rules if the FWS has determined that nesting for the CSSS sub-population A has ended, or if the headwater at S-333 falls below 8.25 ft-NGVD.	See note 2 and 3 below. Make maximum practicable releases at S-142, S-151, S-31, S-337, S-335, S-333, S-355A&B and S-334, subject to downstream constraints. If the headwater at S-333 falls below 8.25 ft-NGVD, then revert to Zone E rules.		Closed during period 1 Nov through 15 July or until the FWS has determined that nesting for the CSSS sub-population A has ended. If the headwater at S-333 falls below 8.25 ft-NGVD, then revert to Zone E rules.

Notes:

1.For the S-12 Structure in Zone A, C, E, and E1: From 1 Nov – 31 Dec, discharges are limited to S-12B, C, and/or D. From 1 Jan – 31 Jan, discharges are limited to S-12C and/or D. From 1 Feb – 15 July, discharges are limited to S-12D, unless the FWS has determined that nesting for the CSSS sub-population A has ended.

2.If G-3273 is above 6.8 ft-NGVD, no discharges to Northeast Shark River Slough are permitted. However, S-333 may discharge up to maximum capacity provided that water can be discharge via S-334 to the South Dade Conveyance system subject to available capacity.

3.Make water supply discharges to the East Coast and ENP-South Dade Conveyance System as needed.


WCA-1 and Lake Okeechobee Stage Hydrographs
1-8C
LOK(WS from WCA-1)
LOK(WS from preceding Inflow)
If WCA-1 stage is below 14', OR if WCA-1 stage is less than one-foot above Lake stage, then water supply releases must be preceded by an equivalent volume of inflow.
Zone A1
Zone B
Zone C
1 ft
1 ft
14.50
12.61
Stage (ft, NGVD)
18.0
17.5
17.0
16.5
16.0
15.5
15.0
14.5
14.0
13.5
13.0
12.5
12.0
1-Mar-04
15-Mar-04
29-Mar-04
12-Apr-04
26-Apr-04
10-May-04
24-May-04
7-Jun-04
21-Jun-04
5-Jul-04