

Future Compliance Monitoring Under CEPP

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Technical Oversight Committee

by:

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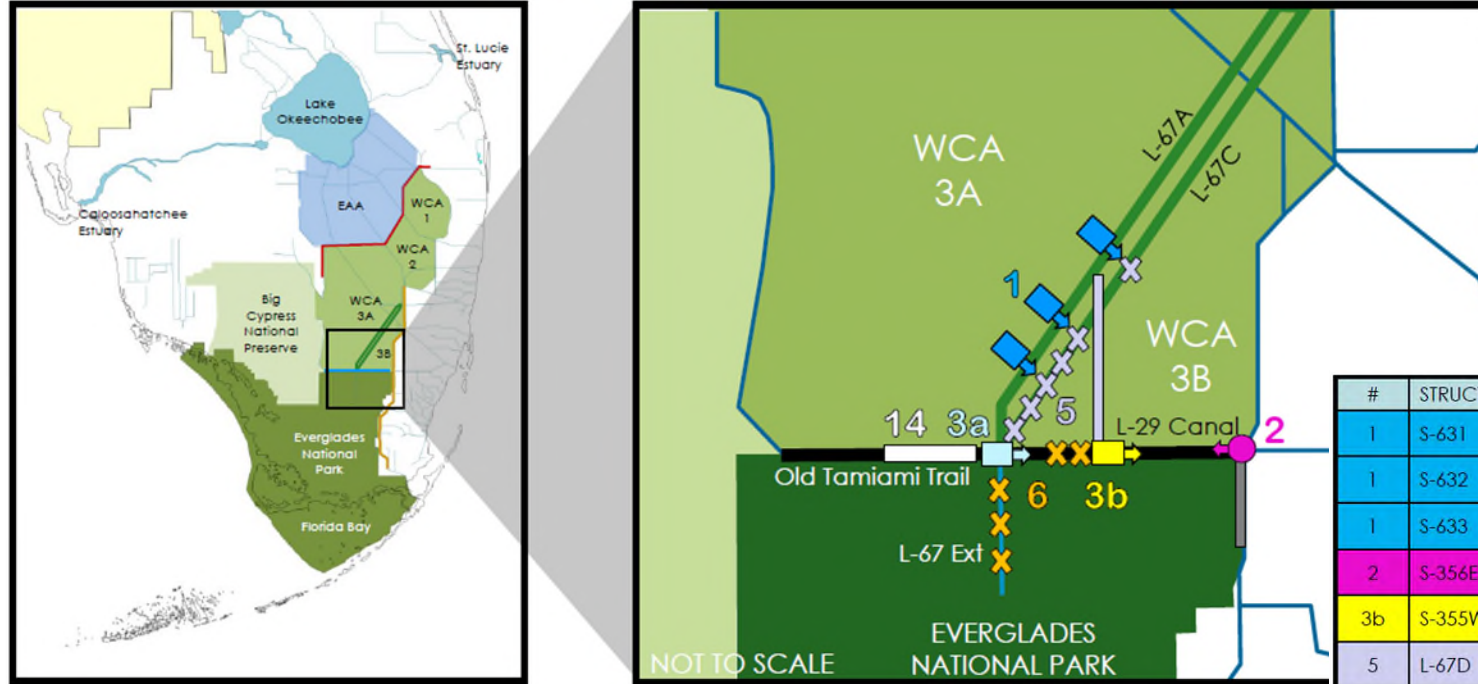
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Objective

- Describe Monitoring Plans
 - L-67A Culverts & L-67C Interim Gap (Contract 1)
 - S-333/S-333N (Contract 3a)
- Look-ahead to Appendix A Monitoring Requirements

CEPP South Overview

BLUE AND GREEN LINES DISTRIBUTION AND CONVEYANCE



LEGEND: Pump Gated Structure Levee Levee Removal Road Removal

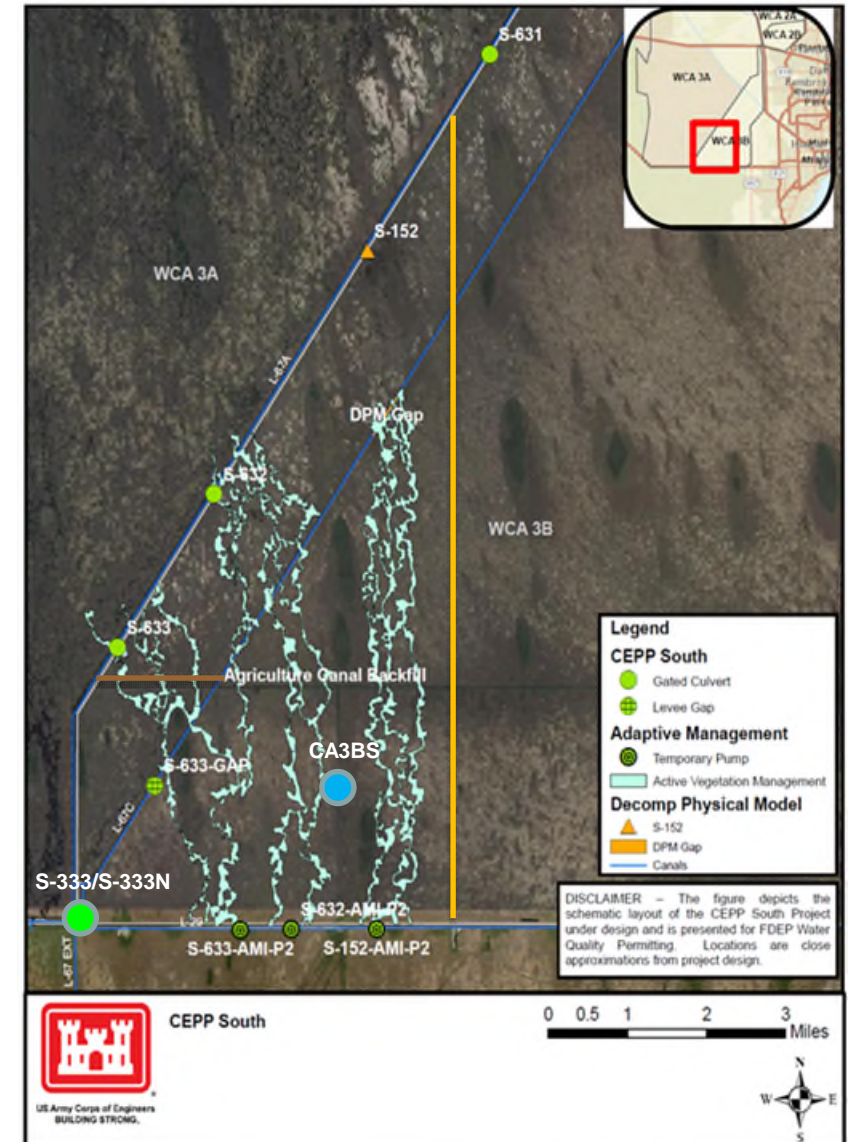
Contract	Award	Duration
1	2020	4 years
2	2022	4 years
3a	2018	2 years
3b	2023	2 years
5	2024	3 years
6	2025	3 years

#	STRUCTURE	STRUCTURE/FEATURE TYPE	CFS	TECHNICAL NOTES
1	S-631	Gated Culvert	500	Delivers water from WCA 3A to 3B, east of L-67D Levee
1	S-632	Gated Culvert	500	Delivers water from WCA 3A to 3B, west of L-67D Levee
1	S-633	Gated Culvert	500	Delivers water from WCA 3A to 3B, west of L-67D Levee
2	S-356E	Pump Station	1000	Provides seepage management for WCA 3B and NESRS stages
3b	S-355W	Gated Spillway	1230	Maintains water deliveries to eastern L-29 Canal
5	L-67D	Blue Shanty Levee		Levee, ~ 8.5 miles, connecting from L-67A to L-29 (6 feet high, 14-foot crest width, 3:1 side slopes)
5	L-67C	Levee Removal Gap		Gap, ~ 6000 feet (corresponding to S-631)
5	L-67C	L-67C Levee Removal		Complete removal of ~ 8 miles from New Blue Shanty Levee (L-67D)south to intersection of L-67A/L-67C; L-67C canal is not backfilled
6	L-29	Levee Removal		Removal of ~ 4.3 miles between L-67A and Blue Shanty Levee intersection with L-29 Levee
6	L-67	L-67 Extension Levee Removal and Canal Backfill)		Complete removal of ~ 5.5 miles of remaining L-67 Extension, including S-346 culvert
3a	S-333N	Gated Spillway w/new canal	1150	Delivers water from L-67A Canal to L-29 Canal; supplements existing S-333 gated spillway
14		Removal of remnants of Old Tamiami Trail roadway		Removal of ~ 6 miles of roadway west of L-67 Extension

CEPP South L-67A/L-67C & S-333/S-333N

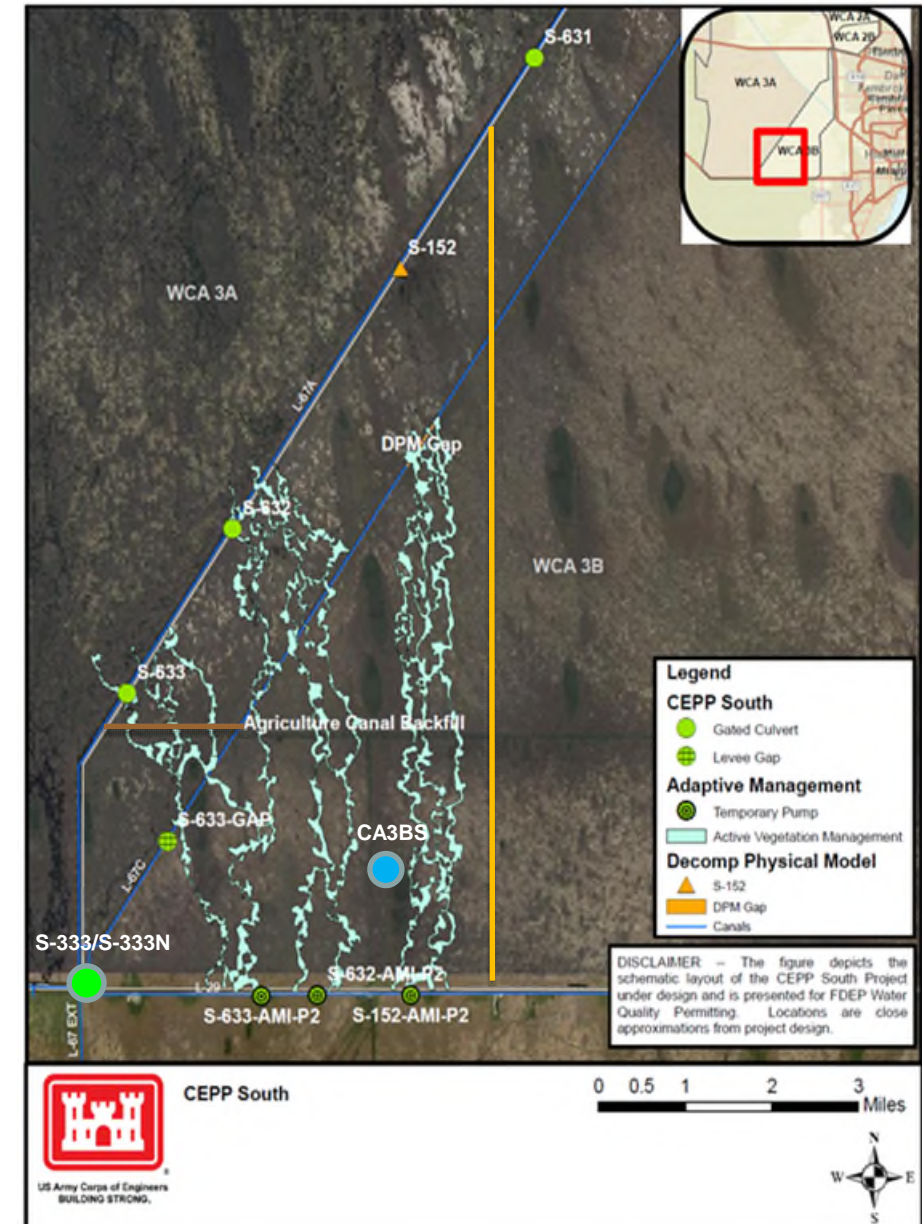
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- L-67A/L-67C (CEPP South Contract 1)
 - 3 x 500 cfs gated culverts
 - Agricultural ditch backfill (~1.4 of 4.0 miles)
 - L-29 temporary pumps (200 cfs)
 - Vegetation management
- S-333 (Existing C&SF Feature)
 - 1,350 cfs gated spillway
- S-333N (CEPP South Contract 3a)
 - 1,150 cfs gated spillway



CEPP South Operations

- “Interim operations during construction”: S-631, S-632, S-633 operated consistent with existing DPM criteria
 - Limit WCA-3B inflows to cumulative 750 cfs
 - All structures closed when projected total phosphorus > 10 ppb
 - All structures closed if WCA-3A (Site 69W) < 7.5 ft NGVD, or WCA-3B (Site 71 or SRS-1) > 8.5 ft NGVD
- Include temporary pumps across L-29 due to phased construction (L-29 Levee removal starts in 2025)
 - Up to 200 cfs combined between 2 locations
 - L-29 pump capacity limited to ½ of combined CEPP WCA-3B inflows (pumps off when combined inflows < 100 cfs)
 - Off when L-29 stage limit of 8.5 ft NGVD, or other COP constraints, are exceeded
- Operations coordinated with USACE and interagency CEPP AM and DPM teams
 - Regional operations governed by AUG 2020 COP



Permit Compliance CEPP South L-67A/L-67C & Temp Pumps

Station	Method	Frequency	Parameter ACODES
S631 S632 S633 S-633-AMI-P1 S-152-AMI-P2	Grab	Biweekly Recorded Flow	Total Nitrogen (TN), Total Phosphorous (TP)
	In-situ	Biweekly Recorded Flow	Dissolved Oxygen (DO), pH, Specific Conductance (SCOND), Temperature (TEMP)
CA3BS	Grab	Monthly	TP
	In-situ	Monthly	Dissolved Oxygen (DO), pH, Specific Conductance (SCOND), Temperature (TEMP)

CEPP South Operations

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- S-333/S-333N
 - Both SFWMD gated spillways from L-67A to L-29
 - Both included in COP WCP
 - S-333N being finalized for operation
 - S-333N will operate per FDEP permit (CERPRA)
 - Current permit is for emergency operations (7/30/2018)
 - Permit mod requests COP WCP operations with downstream constraints (e.g., S-356 priority)
 - Use in conjunction with S-333 to convey water from WCA 3A to ENP per TTFF subject to L-29 constraint



S-333 and S-333N

From downstream looking northwest to WCA-3A

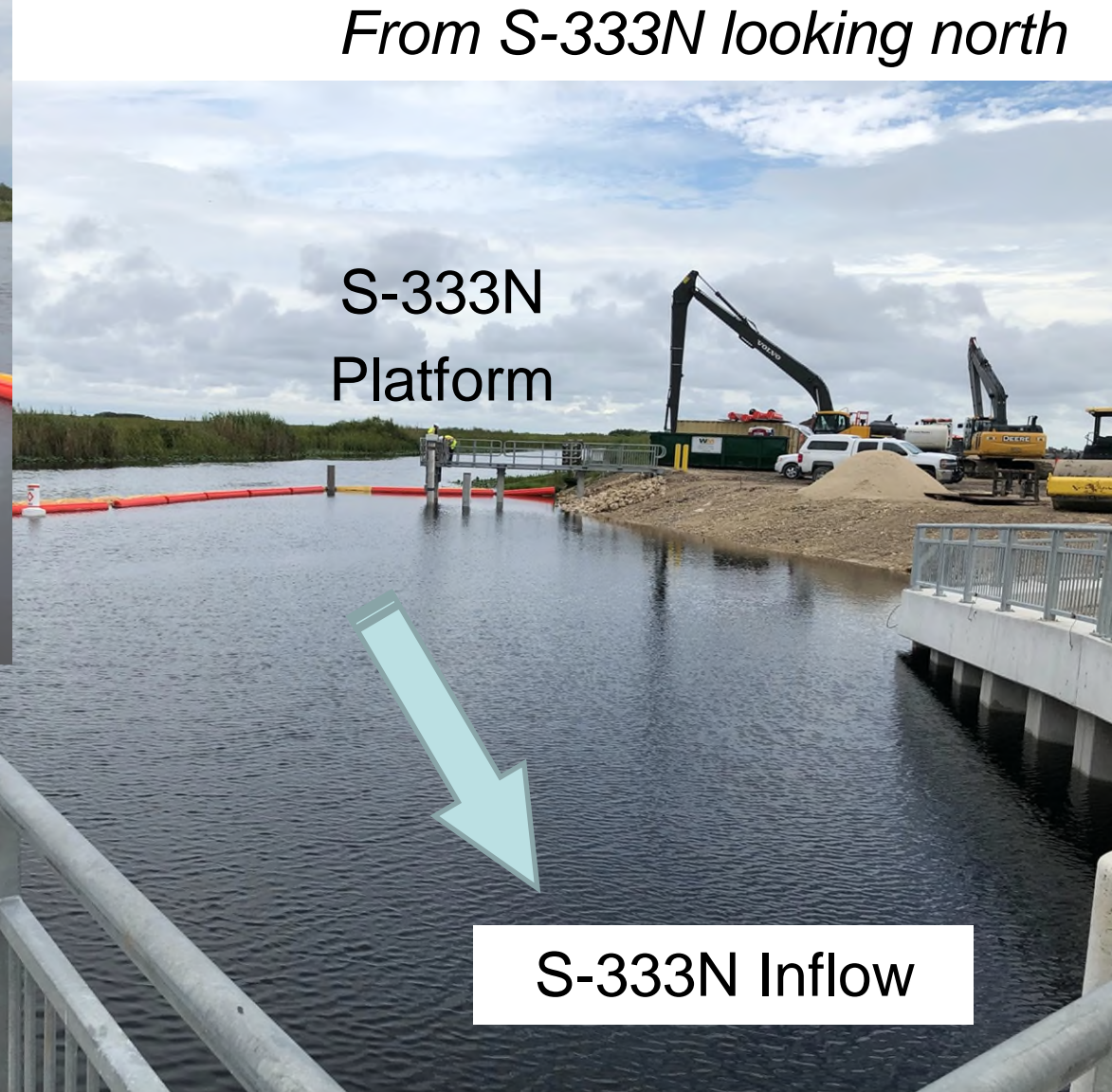


S-333N Monitoring Location

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From L-67A looking south



SA/Permit Compliance CEPP South S-333/S-333N

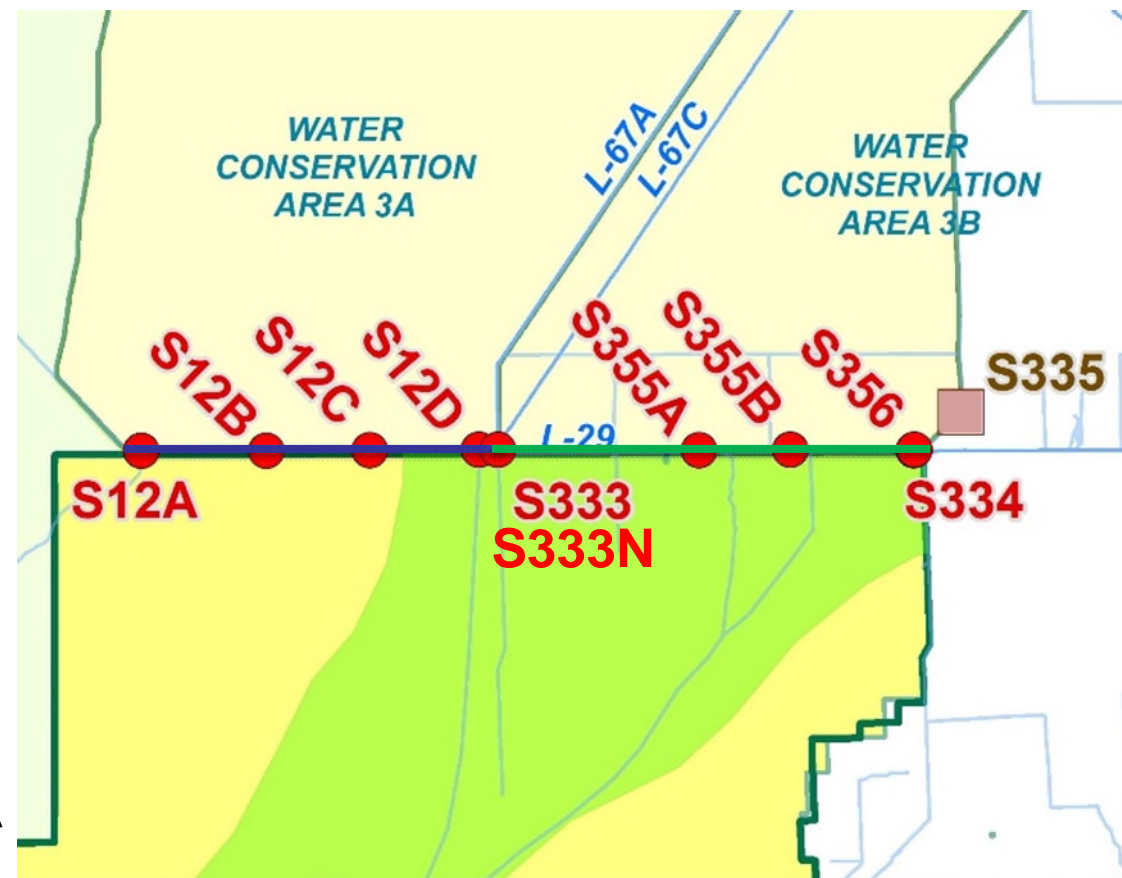
Station	Method	Frequency	Parameter ACODES
S-333 S-333N	Grab	*Weekly Recorded Flow Otherwise Monthly	TPO ₄ , OPO ₄ , TN, NO _x , TSS, Cl, Ca
	In-situ	*Weekly Recorded Flow Otherwise Monthly	Dissolved Oxygen (DO), pH, Specific Conductance (SCOND), Temperature (TEMP)
	Grab	*Quarterly Recorded Flow	SO ₄ , TURB

***Notes:**

- While weekly TP grabs are collected, only bi-weekly are used for SRS Appendix A compliance.
- Although permit-required frequencies can vary, bi-weekly TP at all SRS inflows on same day will continue.

Appendix A SRS Considerations

- S-333/S-333N
 - S333 continues operation and monitoring
 - S-333N pending operation, monitoring underway
 - Increases potential volumes to Northeast SRS
- New L-29 Pumps “temporary” ENP inflow
 - ~25,000 to 55,000 ac-ft (assumes 4-6 month operational window per DPM Phase 2)
 - Projected COP inflow to L-29 is 711,000 ac-ft
 - Releases counted as part of COP Tamiami Trail Flow Formula (TTFF) target flow accounting for releases to ENP from WCA 3A
 - Monitoring strategy considers information required for SRS compliance calculation
 - New inflow could begin ~July to December 2021 and continue to 2025-2026 (start of Contract 6)



*Shark River Slough Appendix A
Monitoring Locations*

Shark River Slough Compliance

Method 1.5 (current)

Annual Long-term Limit (sum of all FWY days)

$$= S12s + S333 + S355A + S355B + \text{MIN}(S356, S335)$$

TP FWMC calculation (bi-weekly compliance sampling events):

- Volume for FWMC (sampling events) = $S12s + S333 + S355A + S355B + \text{MIN}(S356, S335) - S334$
- Sampling event TP FWMC = sum of the following divided by “Volume for FWMC”
 - $S12A \text{ TP} * S12A \text{ flow}; S12B \text{ TP} * S12B \text{ flow}; S12C \text{ TP} * S12C \text{ flow}; S12D \text{ TP} * S12D \text{ flow}$
 - $S333 \text{ TP} * S333 \text{ flow} * \text{fraction of L-29E inflows to SRS}$
 - $S355A \text{ TP} * S355A \text{ flow} * \text{fraction of L-29E inflows to SRS}$
 - $S355B \text{ TP} * S355B \text{ flow} * \text{fraction of L-29E inflows to SRS}$
 - $S356 \text{ TP} * \text{MIN}(S356, S335) * \text{fraction of L-29E inflows to SRS}$
 - $\text{Fraction of L-29E to SRS} = (\text{total flow to L-29} - S334) / (\text{total flow to L-29})$

Shark River Slough Compliance

For Discussion of Future Conditions

Annual Long-term Limit (sum of all FWY days)

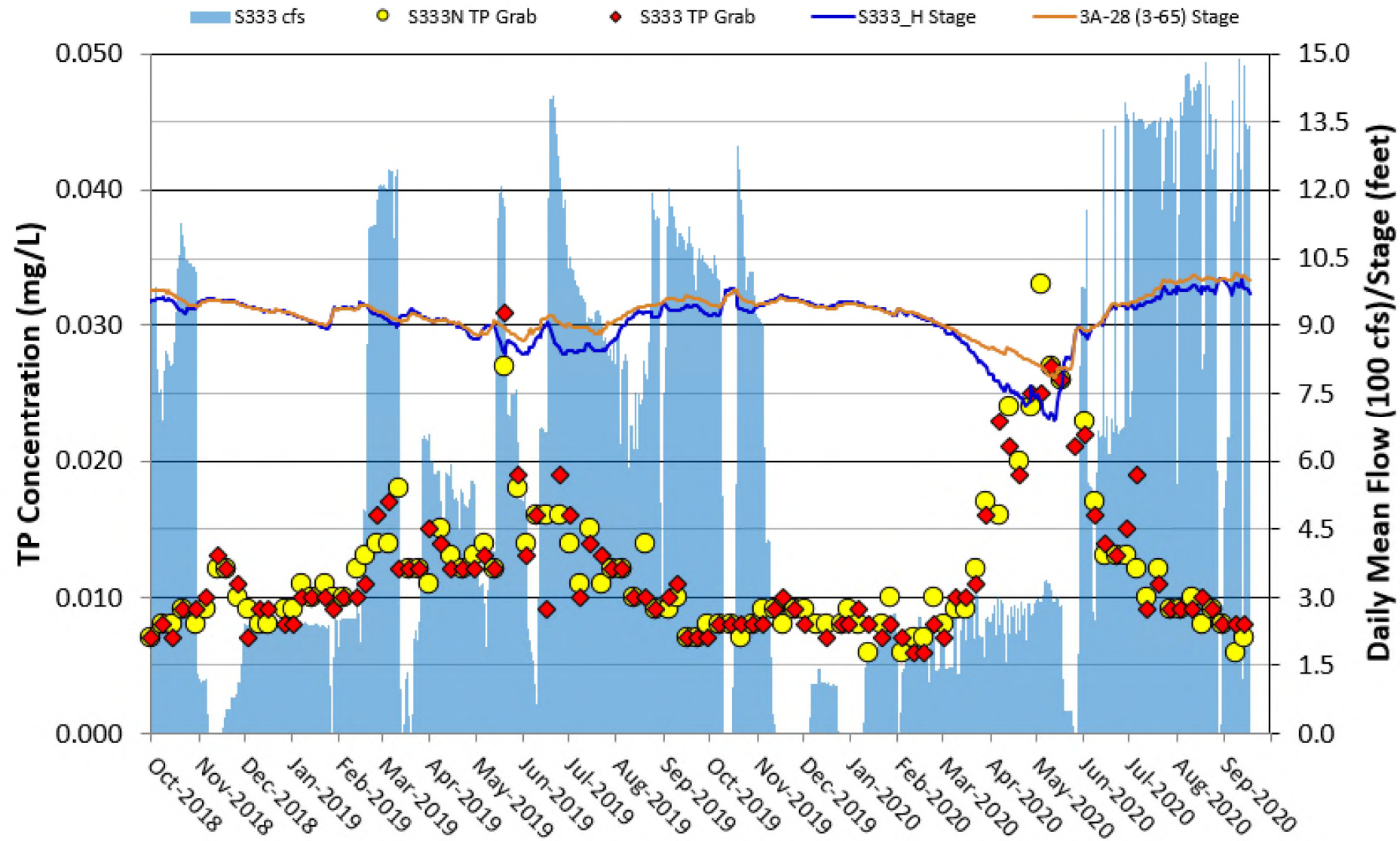
$$= S12s + S333 + S355A + S355B + \text{MIN}(S356, S335) + \text{more terms here?}$$

TP FWMC calculation (bi-weekly compliance sampling events):

- Volume for FWMC (sampling events) = $S12s + S333 + S355A + S355B + \text{MIN}(S356, S335) - S334$
- Sampling event TP FWMC = sum of the following divided by “Volume for FWMC”
 - $S12A \text{ TP} * S12A \text{ flow}; S12B \text{ TP} * S12B \text{ flow}; S12C \text{ TP} * S12C \text{ flow}; S12D \text{ TP} * S12D \text{ flow}$
 - $S333 \text{ TP} * S333 \text{ flow} * \text{fraction of L-29E inflows to SRS}$
 - $S355A \text{ TP} * S355A \text{ flow} * \text{fraction of L-29E inflows to SRS}$
 - $S355B \text{ TP} * S355B \text{ flow} * \text{fraction of L-29E inflows to SRS}$
 - $S356 \text{ TP} * \text{MIN}(S356, S335) * \text{fraction of L-29E inflows to SRS}$
 - *Add more terms here? Representative monitoring? L-29 Levee degrade?*
 - Fraction of L-29E to SRS = $(\text{total flow to L-29} - S334) / (\text{total flow to L-29})$

S-333/S-333N TP

Future Evaluation?



Questions