Lake Okeechobee System Operating Manual

Iteration 3 Modeling Evaluation - Preferred Alternative

Sanibel-Captiva Conservation Foundation

Conservancy of Southwest Florida

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Iteration 3 - Model runs

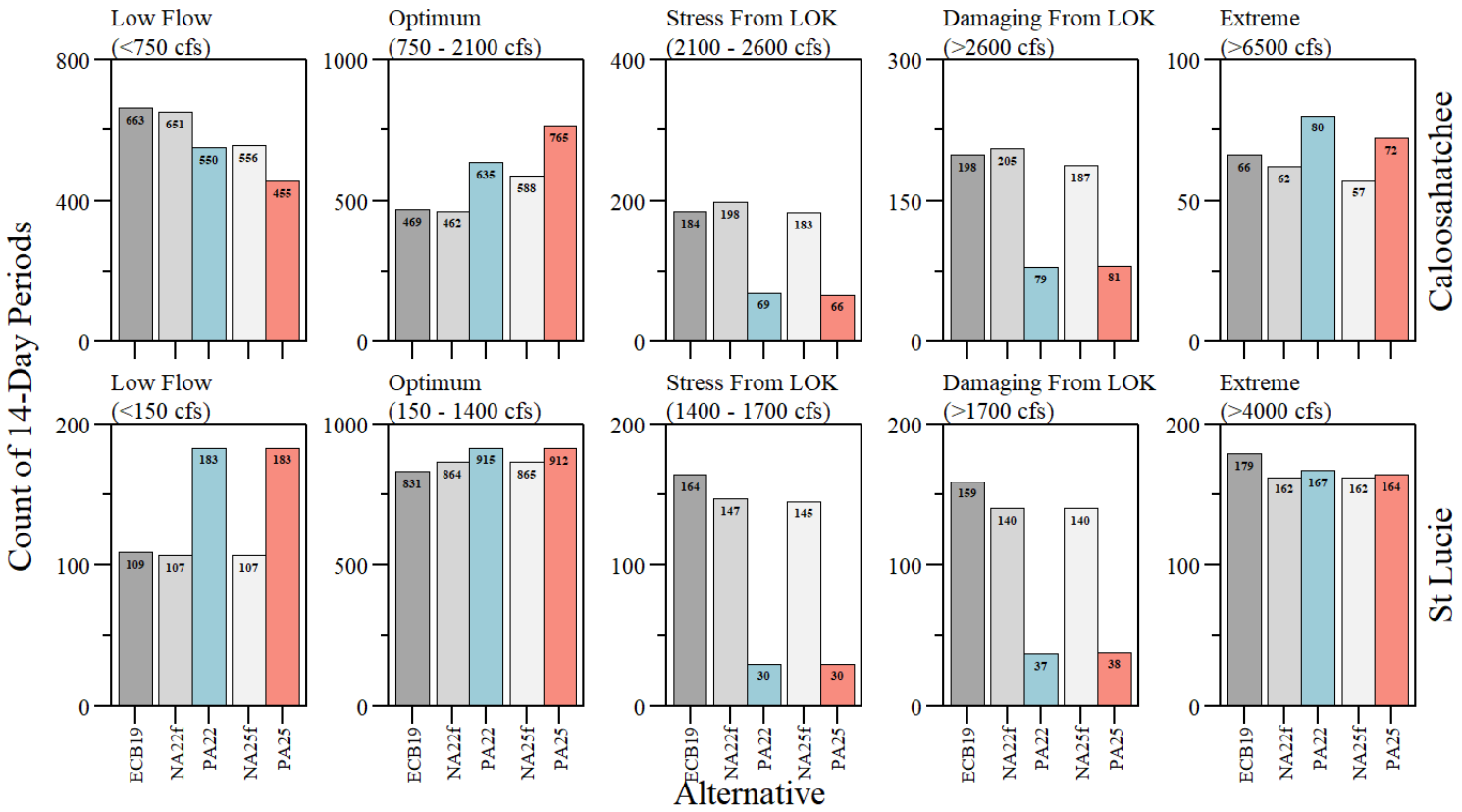
Alternative	Description
ECB19 [1]	LOSOM Existing Conditions Baseline 2019 with LORS08
NA22f [2]	LOSOM No Action 2022 (without C43 Reservoir) with LORS08
NA25f [3]	LOSOM No Action 2025 (with C43 Reservoir) with LORS08
PA22	Preferred Alterative 2022. Distinct operational zones and regulatory disharge rates selected based on LOSOM objectives (without C43 Reservoir)
PA25	Preferred Alterative 2025. Distinct operational zones and regulatory disharge rates selected based on LOSOM objectives (with C43 Reservoir)

[1] Existing Conditions Baseline 2019

[2] No Action Condition 2022

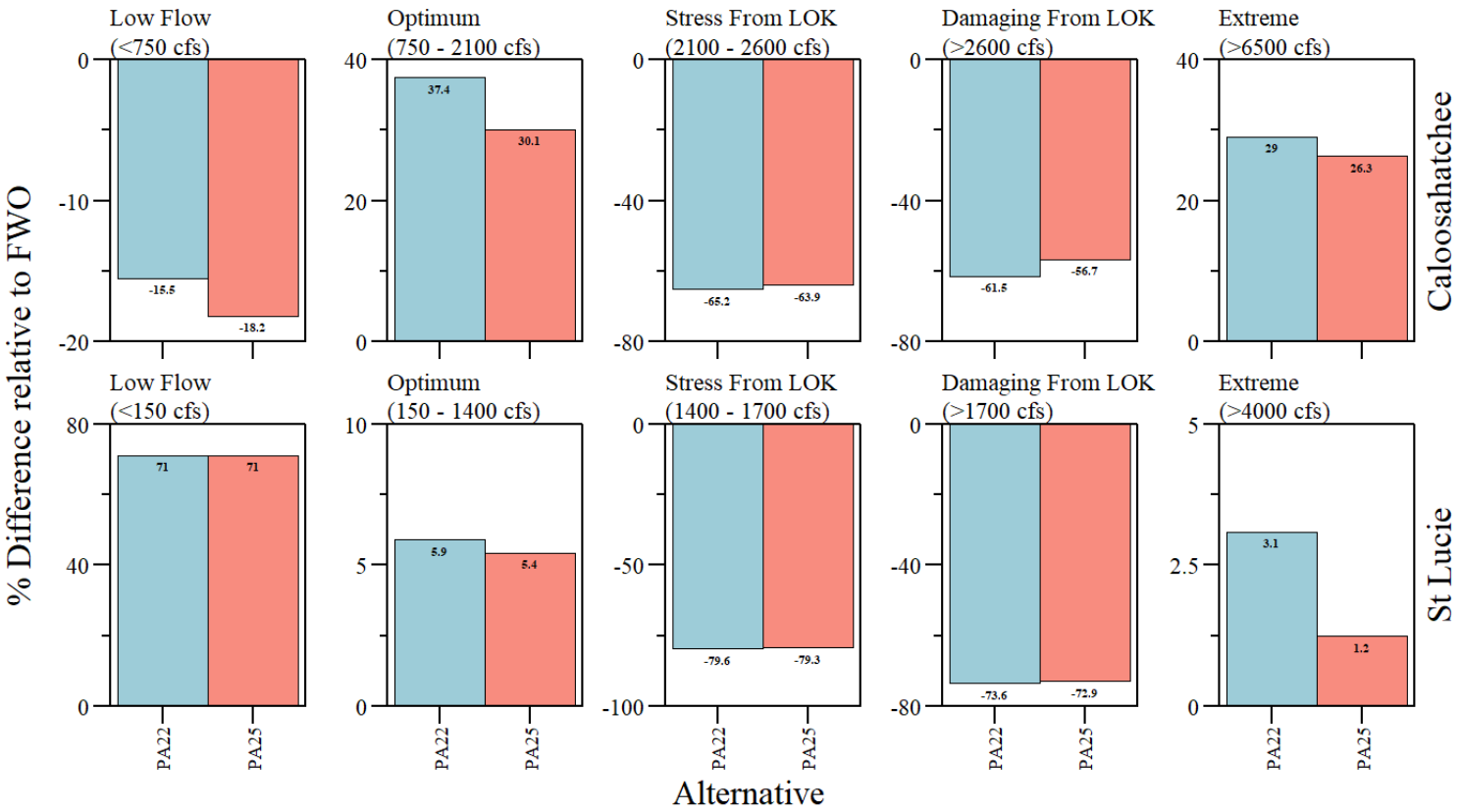
[3] No Action Condition 2025

Salinity Envelope



RECOVER salinity envelope evaluation during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries.

Salinity Envelope



RECOVER salinity envelope evaluation relative to each respective FWO/No Action Alterantives during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries.

RECOVER Estuary salinit envelope 14-day period count of low, optimum, stress, damaging and extreme flow events for Caloosatchee and St Lucie estuaries based on 14-day moving average discharge data.

Area	Alt	Low Events	Optimum Events	Stress Events from LOK	Damaging Events from LOK	Extreme Events
CRE [1]	ECB19	663	469	184	198	66
	NA22f	651	462	198	205	62
	PA22	550	635	69	79	80
	NA25f	556	588	183	187	57
	PA25	455	765	66	81	72
SLE [1]	ECB19	109	831	164	159	179
	NA22f	107	864	147	140	162
	PA22	183	915	30	37	167
	NA25f	107	865	145	140	162
	PA25	183	912	30	38	164

[1] CRE: Caloosahatchee Estuary; SLE: St Lucie Estuary

Low Flows CRE: < 750 cfs; SLE: < 150 cfs

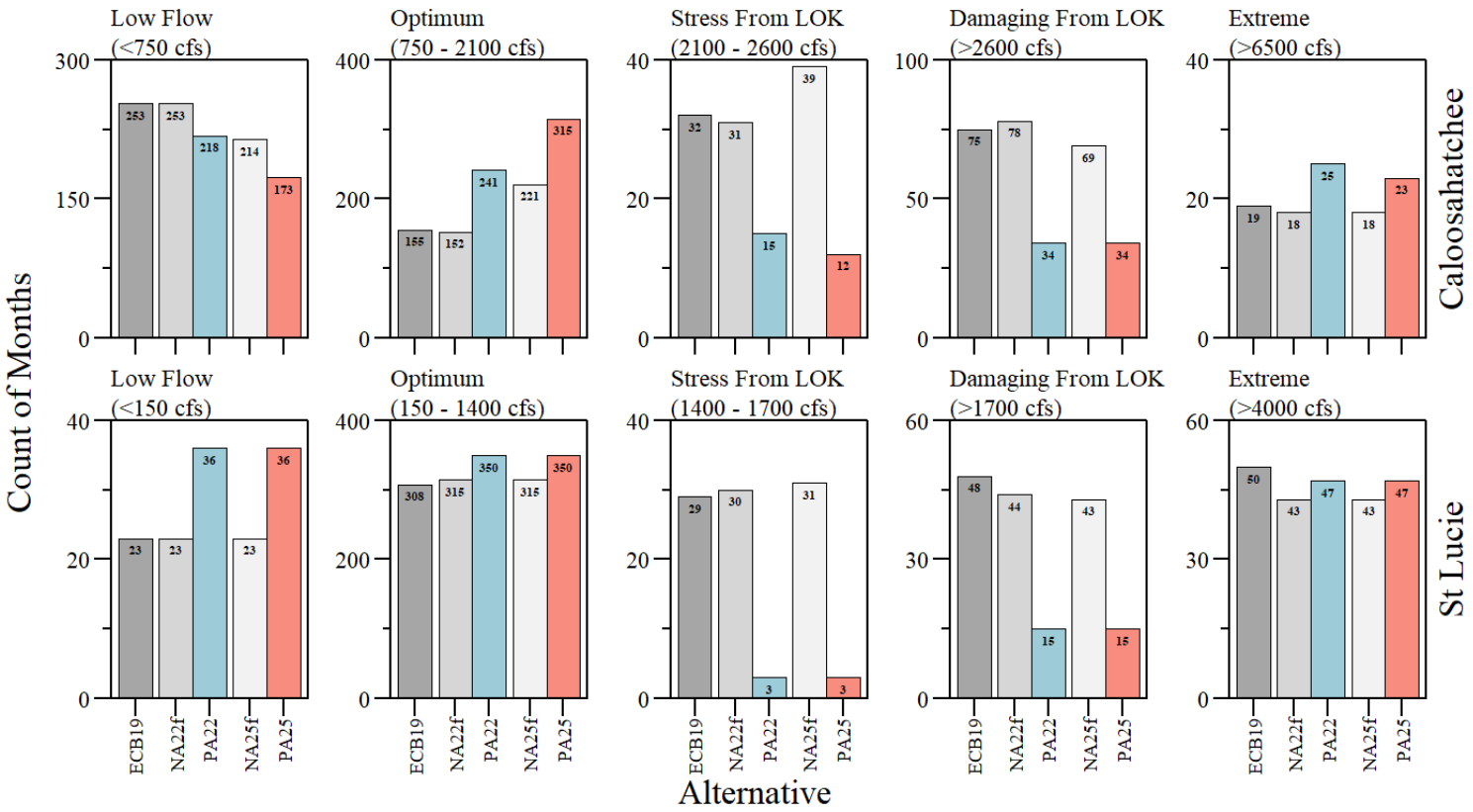
Optimum Flows CRE: ≥ 750 cfs & < 2100 cfs; SLE: ≥ 150 cfs & < 1400 cfs cfs

Stressful Flows CRE: ≥ 2100 cfs & < 2600 cfs; SLE: ≥ 1400 cfs & < 1700 cfs

Damaging Flows CRE: > 2600 cfs; SLE:> 1700 cfs

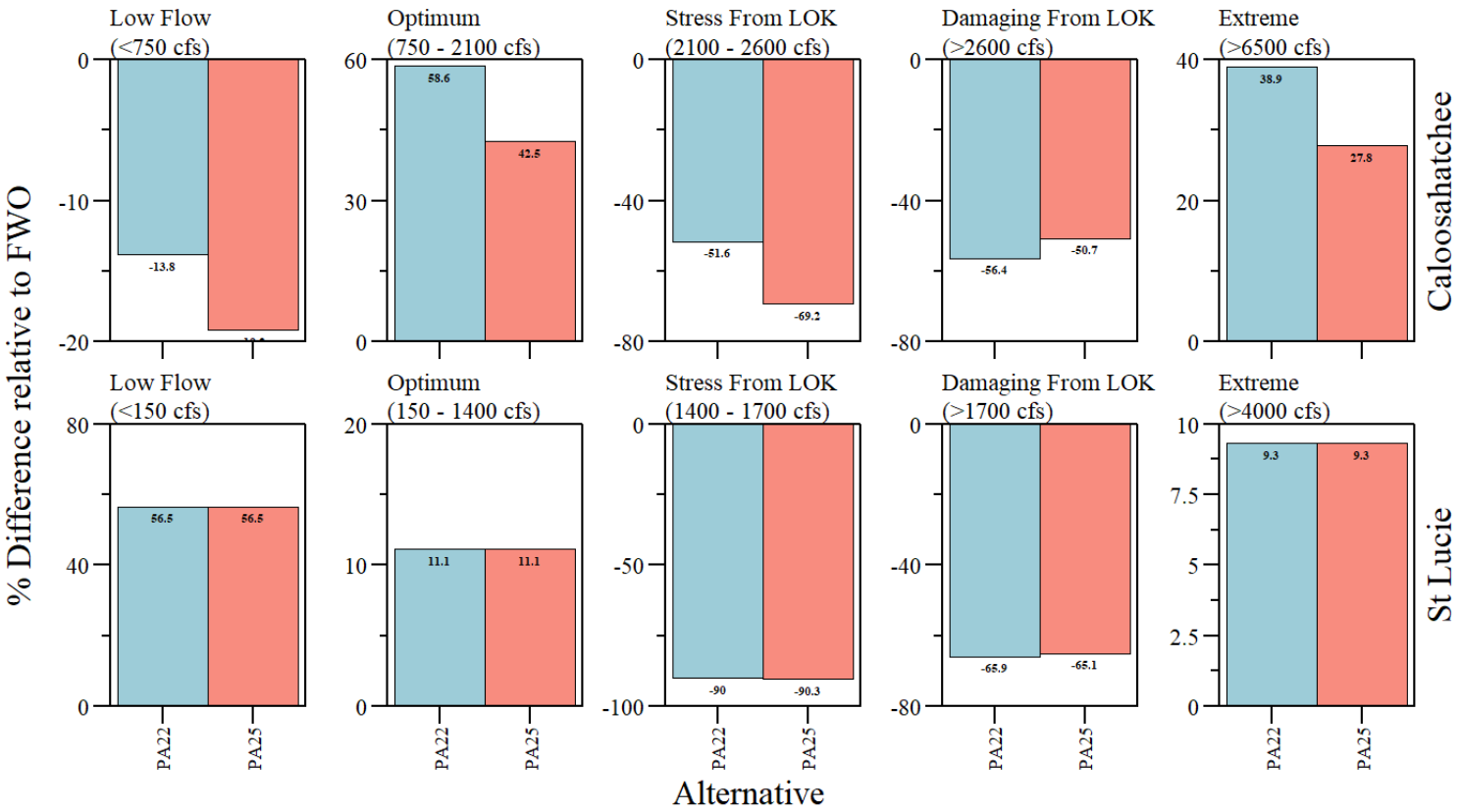
Data Source: USACE and SFWMD Interagency Modeling Center.

Salinity Envelope



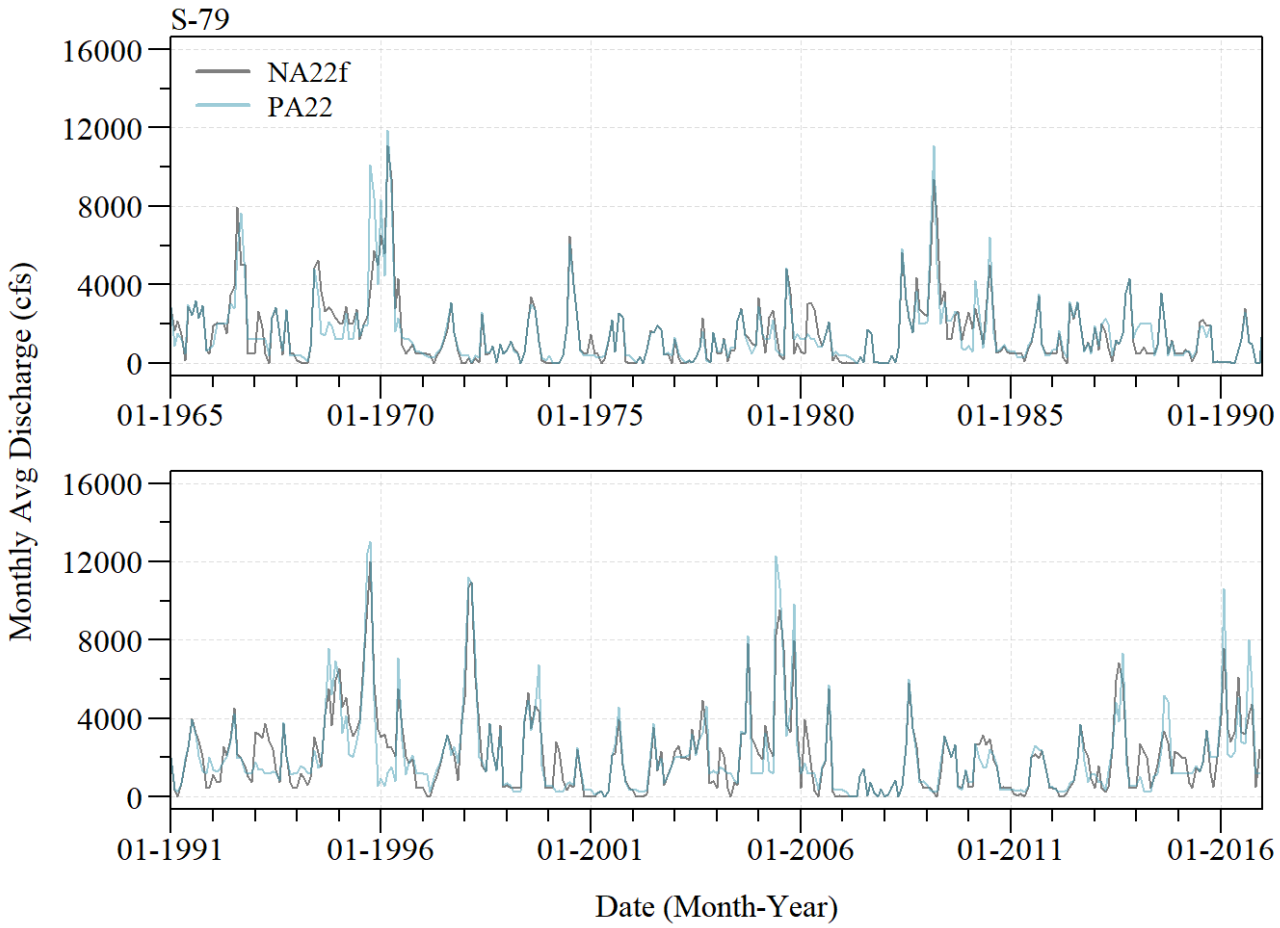
Monthly salinity envelope evaluation during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries.

Salinity Envelope



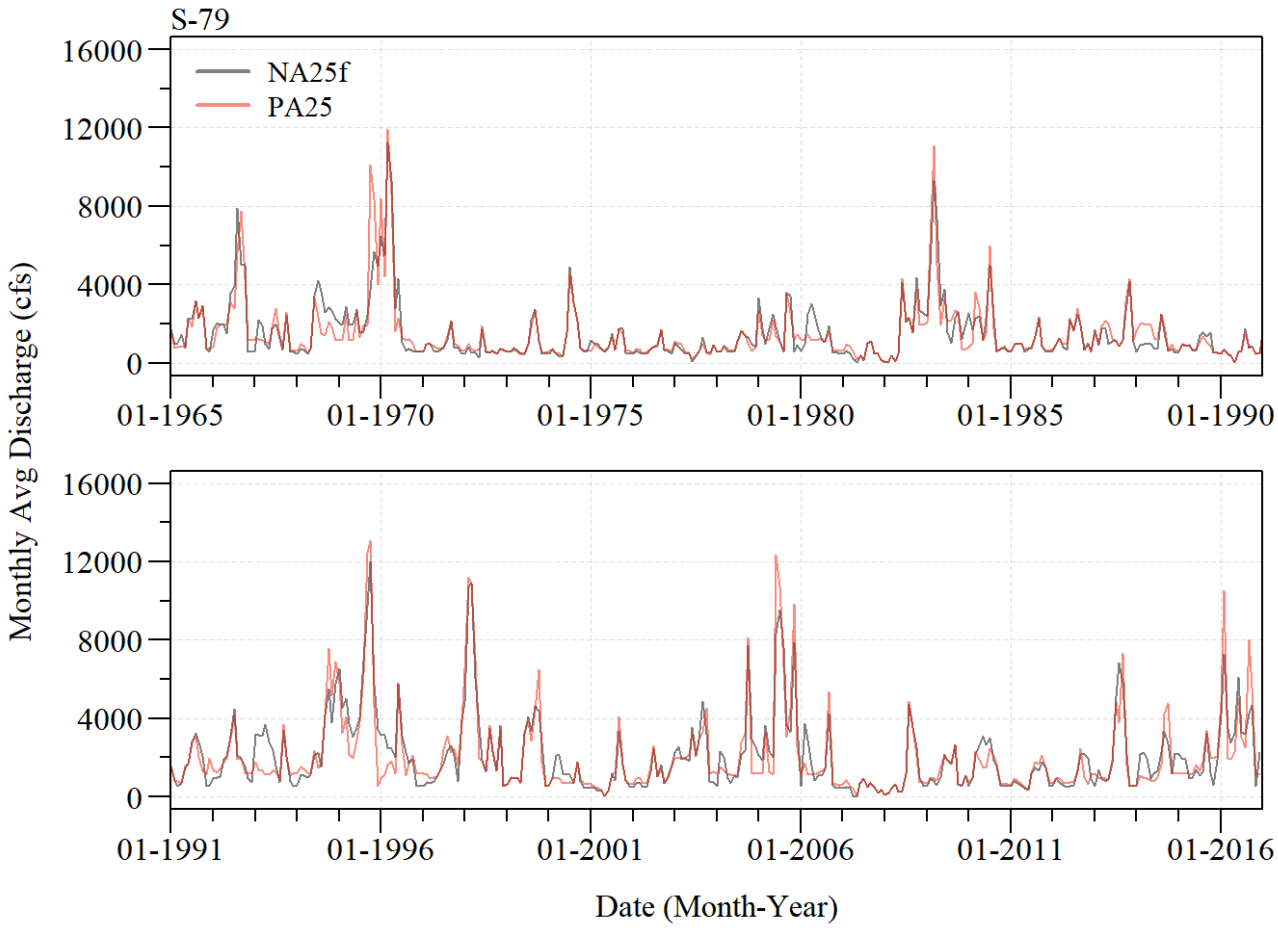
Monthly salinity envelope evaluation relative to each respective FWO/No Action Alterantives during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries.

CRE Discharge



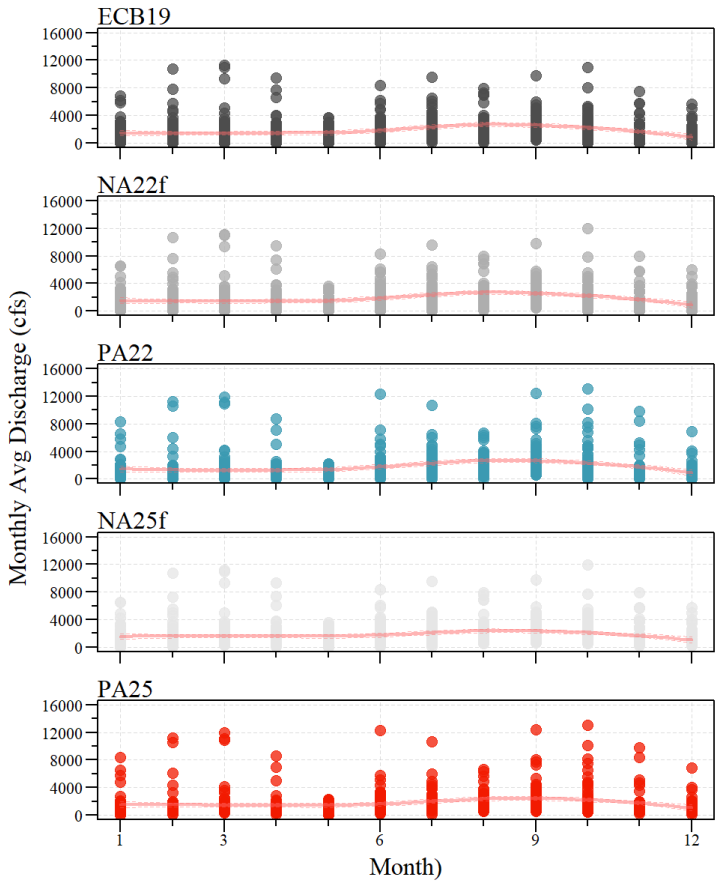
Comparing monthly average discharge at S79 between NA22f and PA22.

CRE Discharge



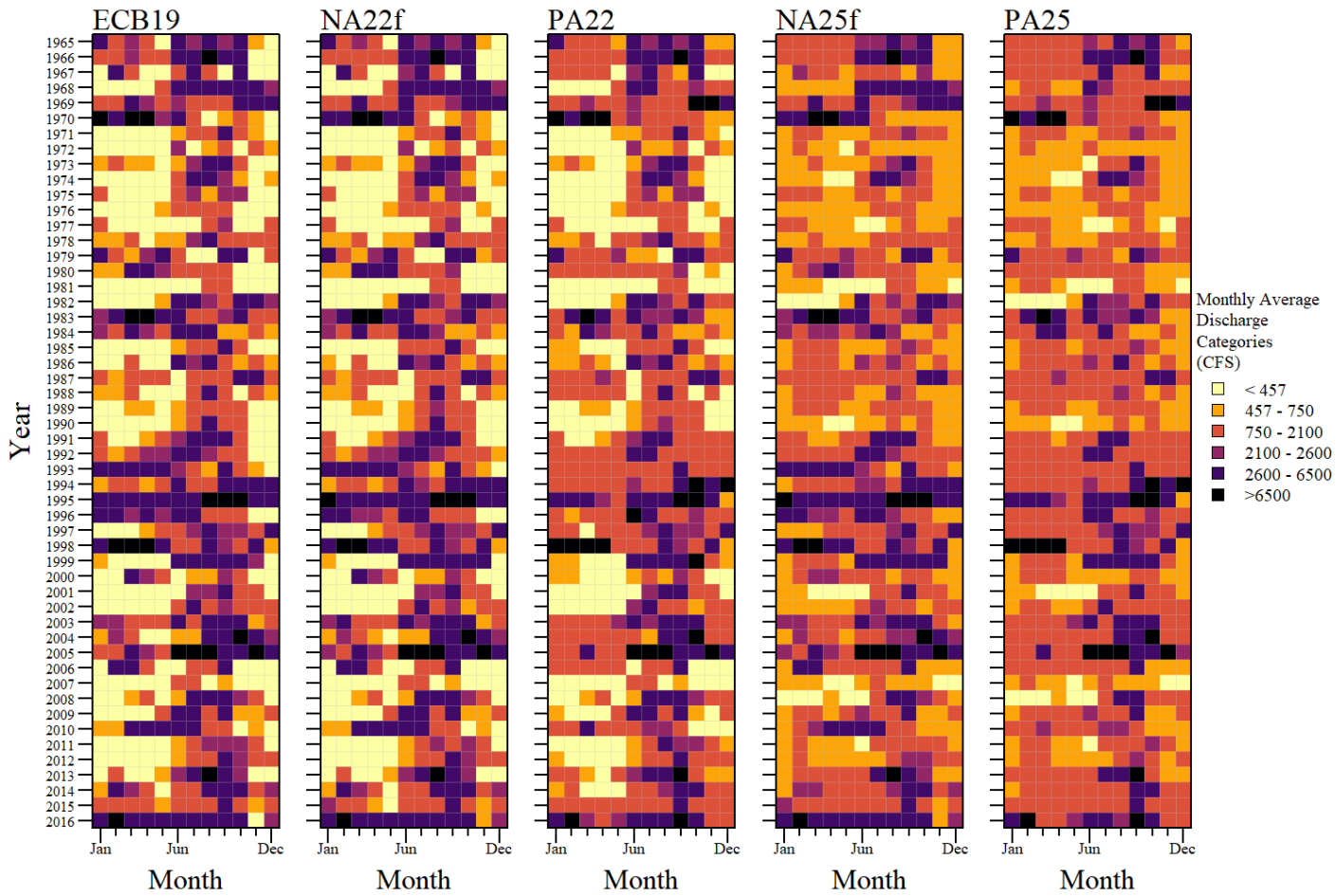
Comparing monthly average discharge at S79 between NA25f and PA25.

CRE Discharge



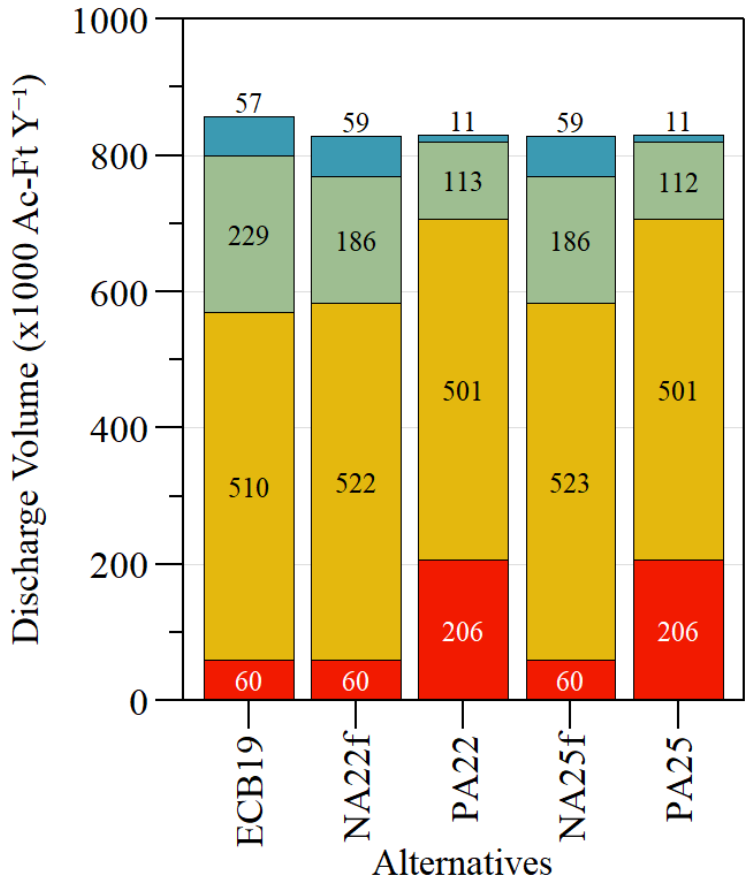
Seasonality of monthly average discharge across all alternatives.

CRE Discharge



Calendar plot of monthly average S-79 discharge.

Regulatory Discharge

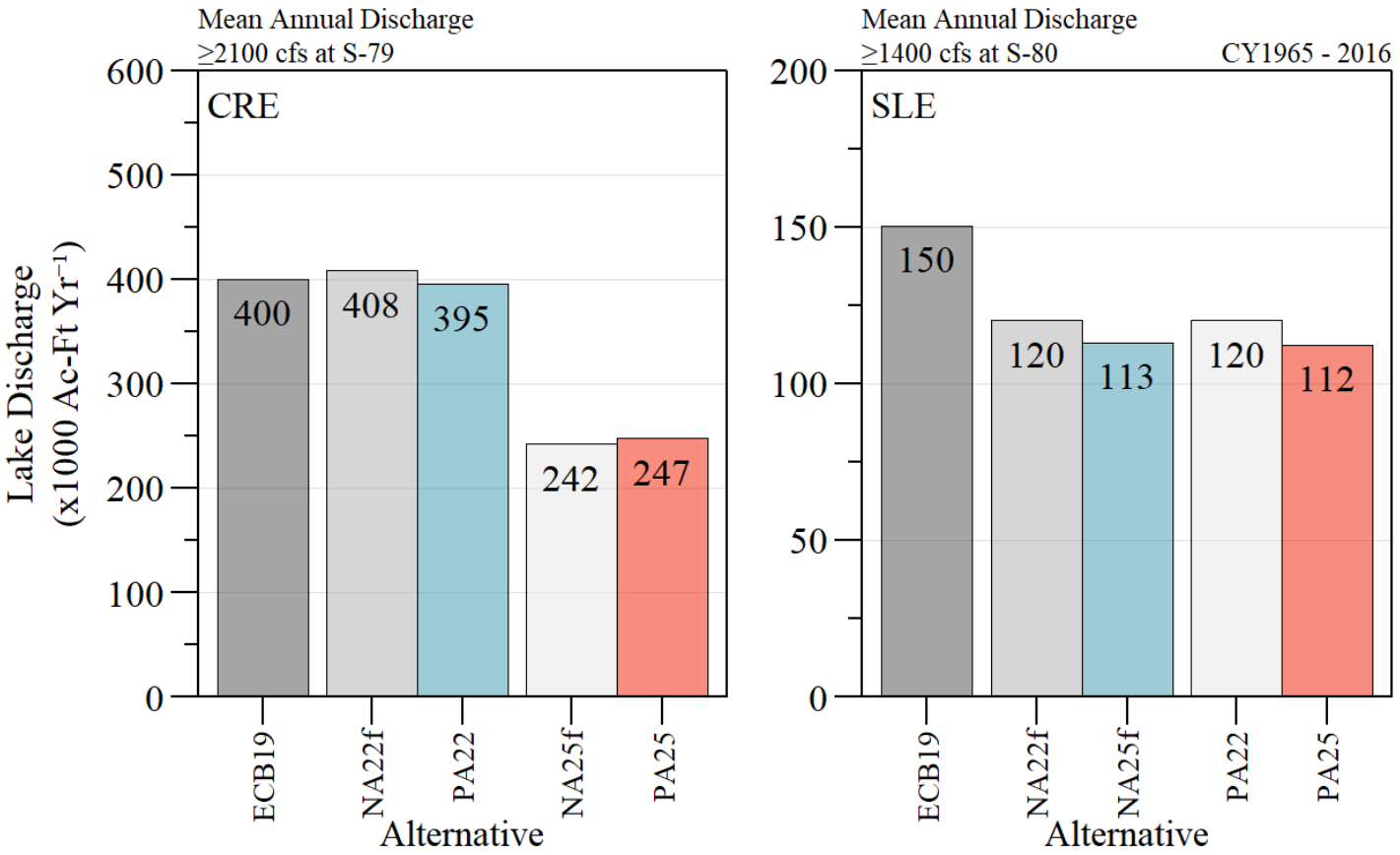


Water Conservation Areas (S351 & S354)
Caloosahatchee River (S77)
St. Lucie River (S308)
Lake Worth Lagoon (S271)

Iteration 3 Preferred Alternative results. Mean annual flood control releases from Lake Okeechobee for the 52 year (1965 - 2016)simulation period of record.

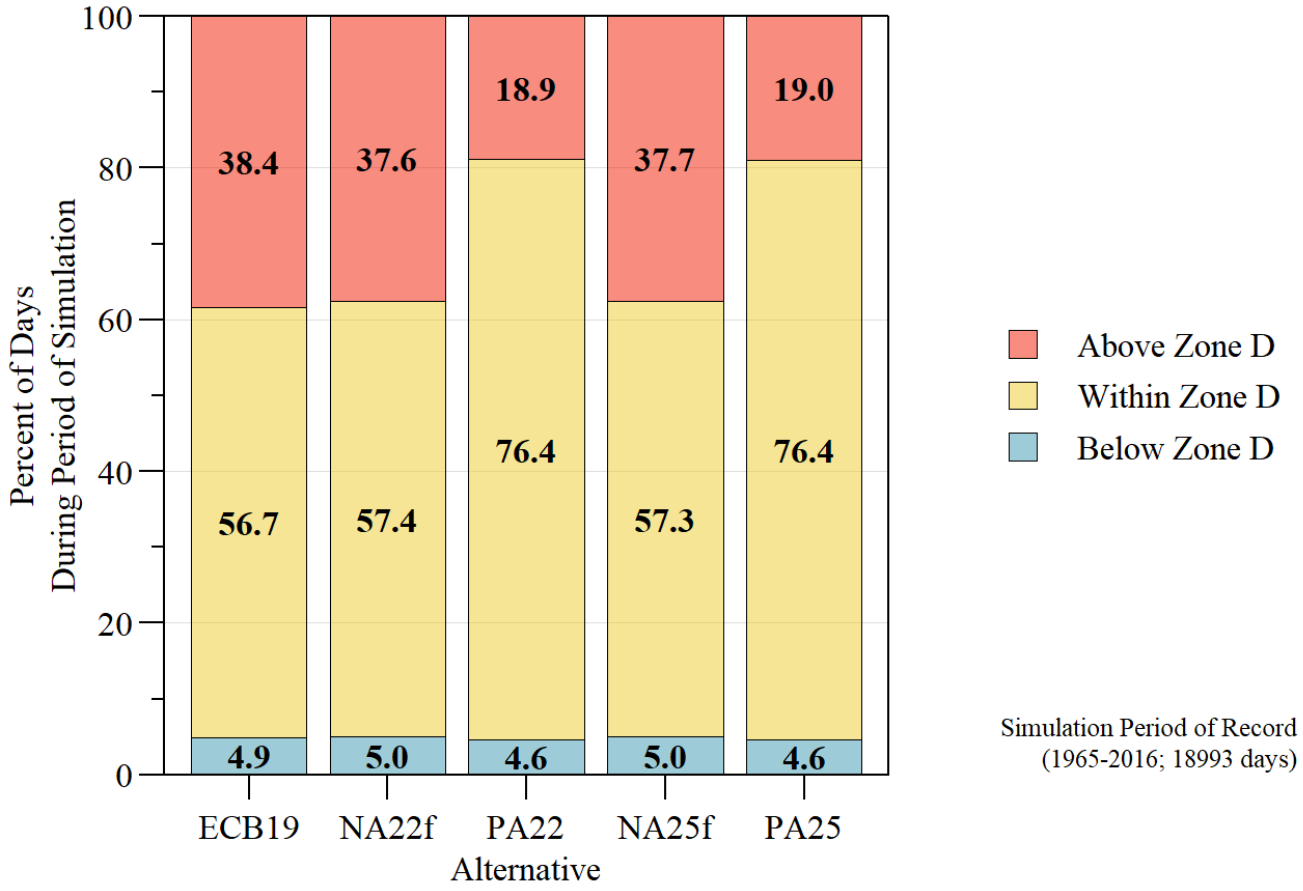
Average annual flood control (i.e. regulatory) discharges for each major flow-path.

Regulatory Discharge



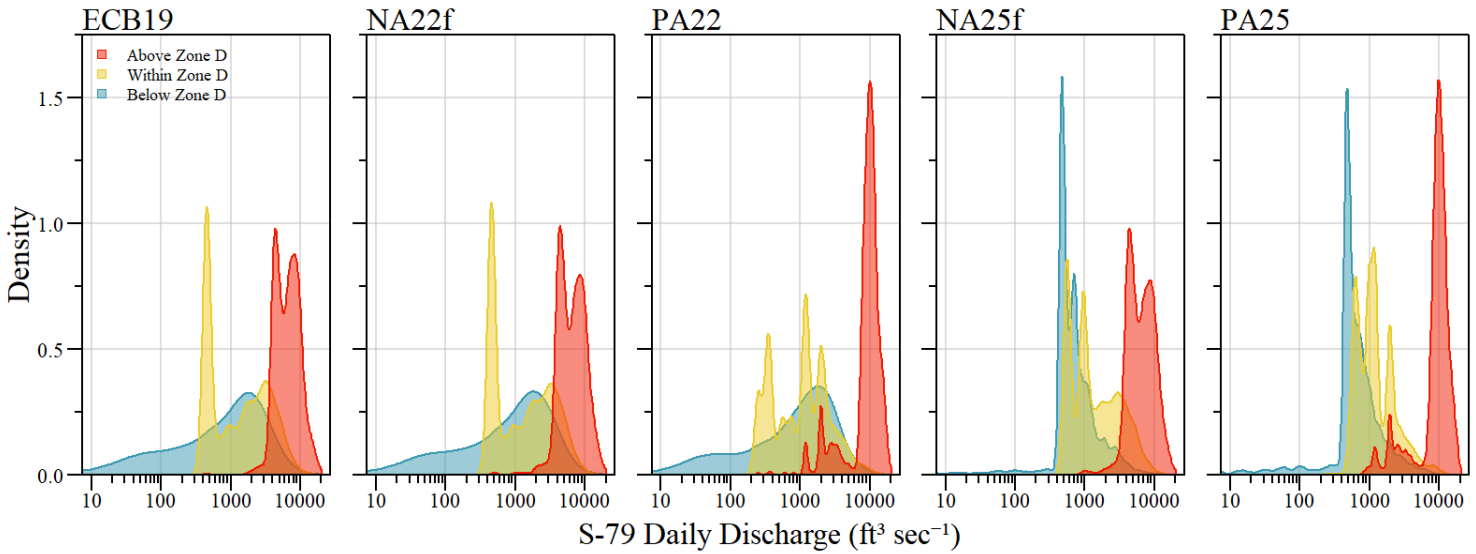
Average annual lake sourced discharges to CRE and SLE within stressful and damaging discharges.

Lake Okeechobee Regulation Schedule



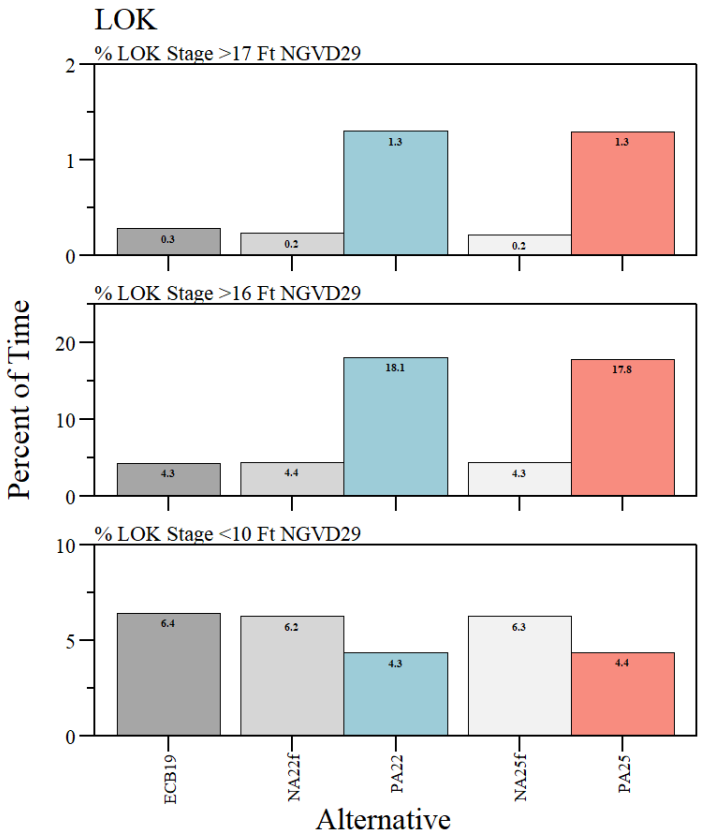
Percent of time (period of simulation) above, within and below Zone D.

Lake Okeechobee Regulation Schedule



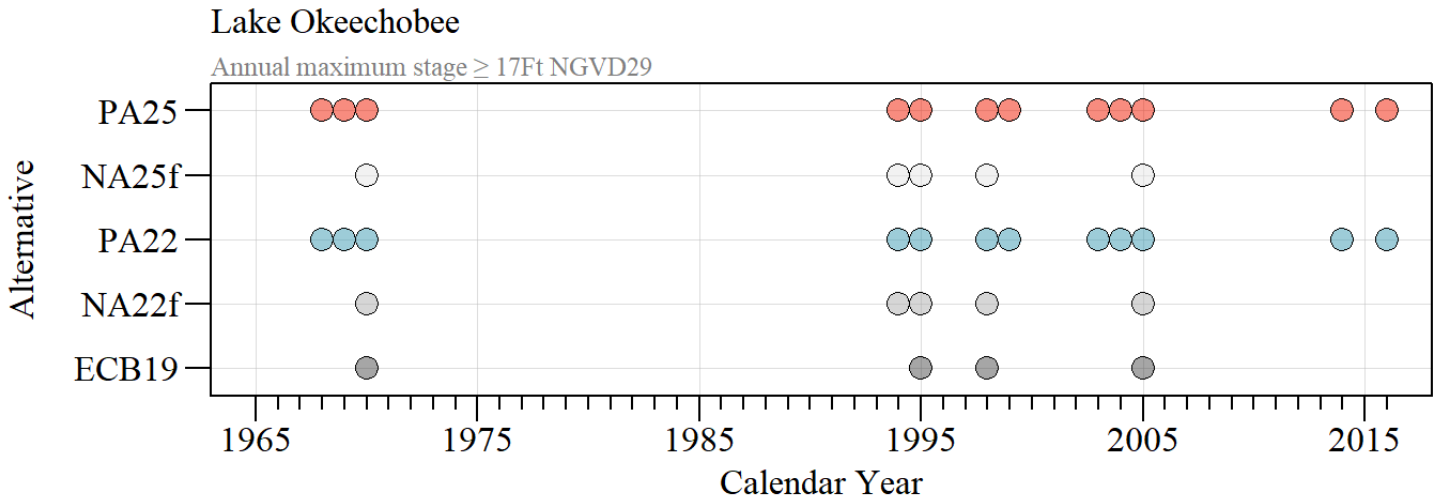
Distribution of daily discharge at S79 above, within and below Zone D.

Lake Okeechobee



Percent of time LOK stage above 17 Ft, 16 Ft and below 10 Ft NGVD29

Lake Okeechobee



Timeline of annual LOK max stage > 17 Ft NGVD29.

Lake Okeechobee

- Place holder Lake Stage Envelope scores

Lake Okeechobee

- place holder extreme high event duration and count

Lake Okeechobee

- place holder recession rates?