

Lake Okeechobee System Operating Manual

POST Iteration 2 Modeling Evaluation

Sanibel-Captiva Conservation Foundation

Conservancy of Southwest Florida

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Average annual regulatory flows (QFC flow tag; CRE: S77; SLE: S308) and stress and damaging events based on RECOVER salinity envelope 14-day event counts for Caloosatchee and St Lucie estuaries.

| Summarized Data | | | | | | | Percent Different from FWO | | | | |
|------------------|-------------------|-----------------------------------|--|--|---|---|-----------------------------------|--|--|---|---|
| Estuary | Alt | Regulatory Flows (kacft/yr) | Stress Events From LOK ³ | Stress Events From Basin ³ | Damaging Events From LOK ⁴ | Damaging Events From Basin ⁴ | Regulatory Flows (kacft/yr) | Stress Events From LOK ³ | Stress Events From Basin ³ | Damaging Events From LOK ⁴ | Damaging Events From Basin ⁴ |
| CRE ¹ | NA25 ² | 528 | 183 | 118 | 186 | 173 | | | | | |
| | ECBr | 515 | 190 | 153 | 205 | 225 | -2.5 | 3.8 | 29.7 | 10.2 | 30.1 |
| | CC | 578 | 289 | 89 | 156 | 174 | 9.5 | 57.9 | -24.6 | -16.1 | 0.6 |
| SLE ¹ | NA25 ² | 187 | 148 | 210 | 142 | 428 | | | | | |
| | ECBr | 231 | 162 | 186 | 160 | 432 | 23.0 | 9.5 | -11.4 | 12.7 | 0.9 |
| | CC | 72 | 13 | 308 | 17 | 469 | -61.7 | -91.2 | 46.7 | -88.0 | 9.6 |

¹ CRE: Caloosahatchee Estuary; SLE: St Lucie Estuary; ² NA25 = Future without project (FWO)

³ Stressful Flows:

CRE: ≥ 2100 cfs & < 2600 cfs

SLE: ≥ 1400 cfs & < 1700 cfs

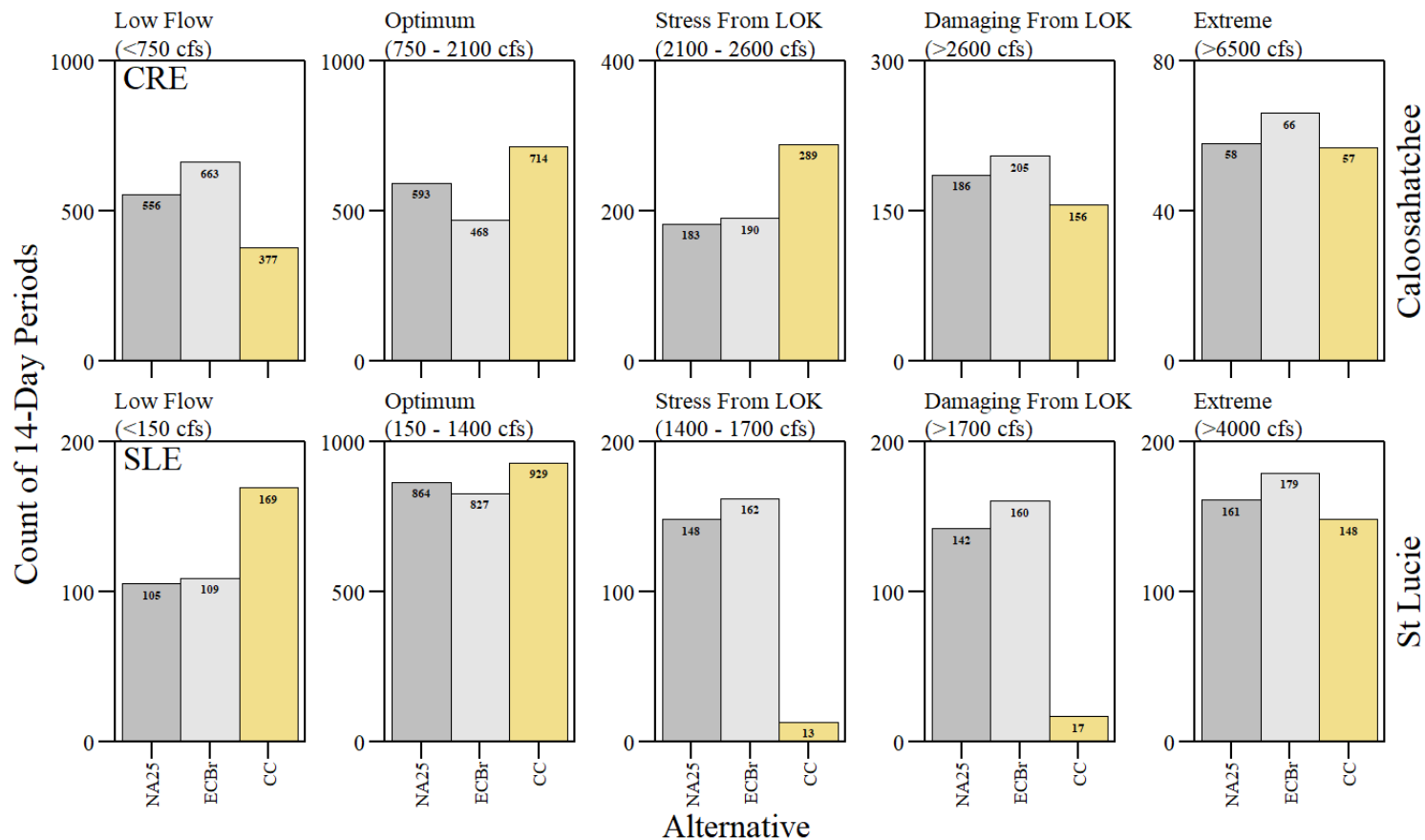
⁴ Damaging Flows:

CRE: > 2600 cfs

SLE: > 1700 cfs

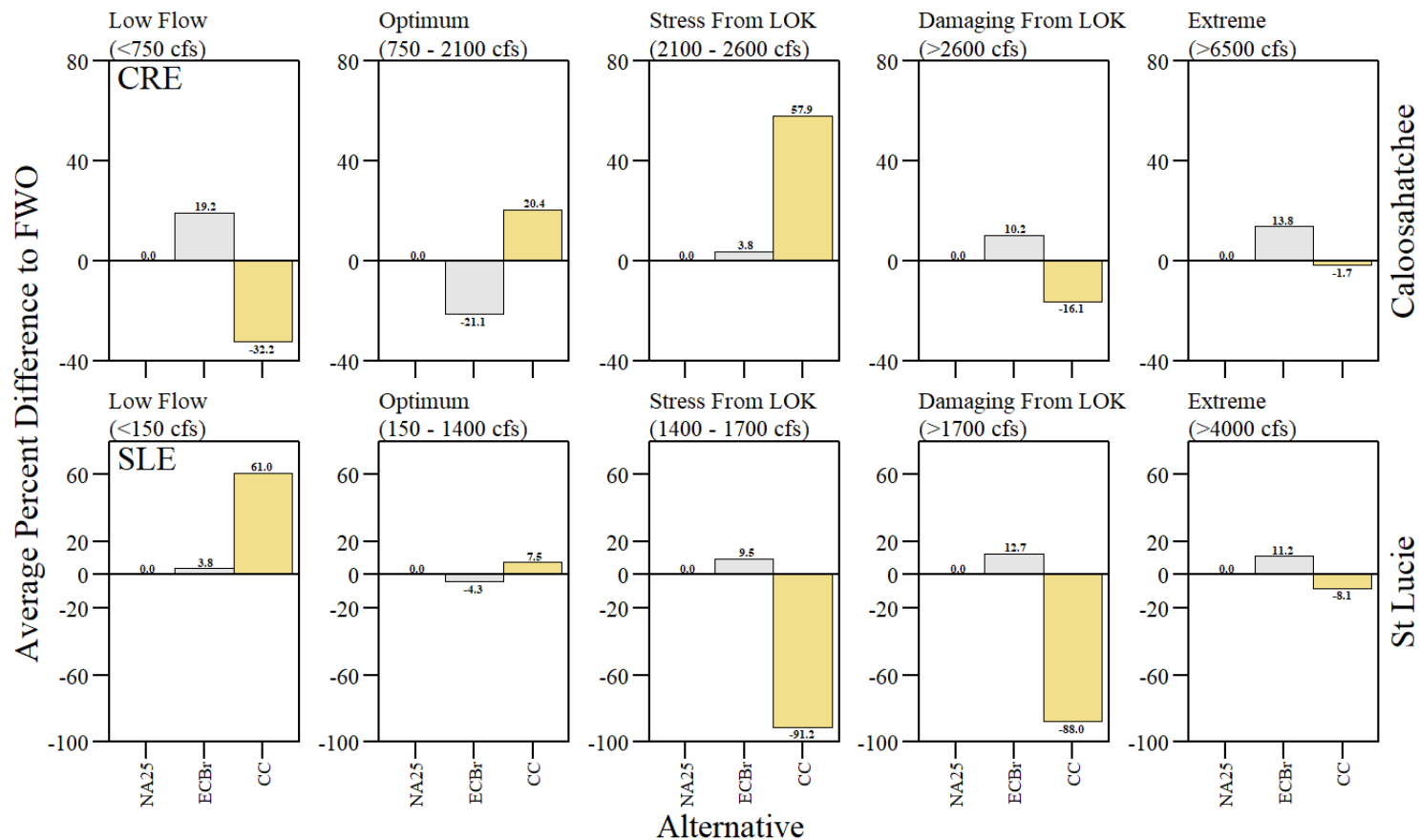
Data Source: USACE and SFWMD Interagency Modeling Center

RECOVER Metric



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

RECOVER Metric



RECOVER salinity envelope evaluation relative to FWO (NA25) during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries.

Daily count of low, optimum, stress and damaging flow events for Caloosatchee and St Lucie estuaries.

| Summarized Data | | | | | | | | Percent Different from FWO | | | | | |
|------------------|-------------------|---------------|-------------------|-------------|---------------|-------------|---------------|----------------------------|-------------------|-------------|---------------|-------------|---------------|
| Estuary | Alt | Low Events | Optimum Events | Stress | Stress | Damaging | Damaging | Low Events | Optimum Events | Stress | Stress | Damaging | Damaging |
| | | | | Events | Events | Events | Events | | | Events | Events | Events | Events |
| | | | | From LOK | From Basin | From LOK | From Basin | | | From LOK | From Basin | From LOK | From Basin |
| CRE ¹ | NA25 ² | 7743 | 6344 | 261 | 488 | 1988 | 2169 | --- | --- | --- | --- | --- | --- |
| | ECBr | 9354 | 3769 | 246 | 706 | 2015 | 2903 | 20.8 | -40.6 | -5.7 | 44.7 | 1.4 | 33.8 |
| | CC | 5058 | 8420 | 450 | 519 | 2199 | 2347 | -34.7 | 32.7 | 72.4 | 6.4 | 10.6 | 8.2 |
| SLE ¹ | NA25 ² | 1943 | 10112 | 388 | 593 | 1444 | 4513 | --- | --- | --- | --- | --- | --- |
| | ECBr | 2045 | 9725 | 405 | 516 | 1567 | 4735 | 5.2 | -3.8 | 4.4 | -13.0 | 8.5 | 4.9 |
| | CC | 3110 | 10433 | 0 | 759 | 201 | 4490 | 60.1 | 3.2 | -100.0 | 28.0 | -86.1 | -0.5 |

¹ CRE: Caloosahatchee Estuary; SLE: St Lucie Estuary; ² NA25 = Future without project (FWO)

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

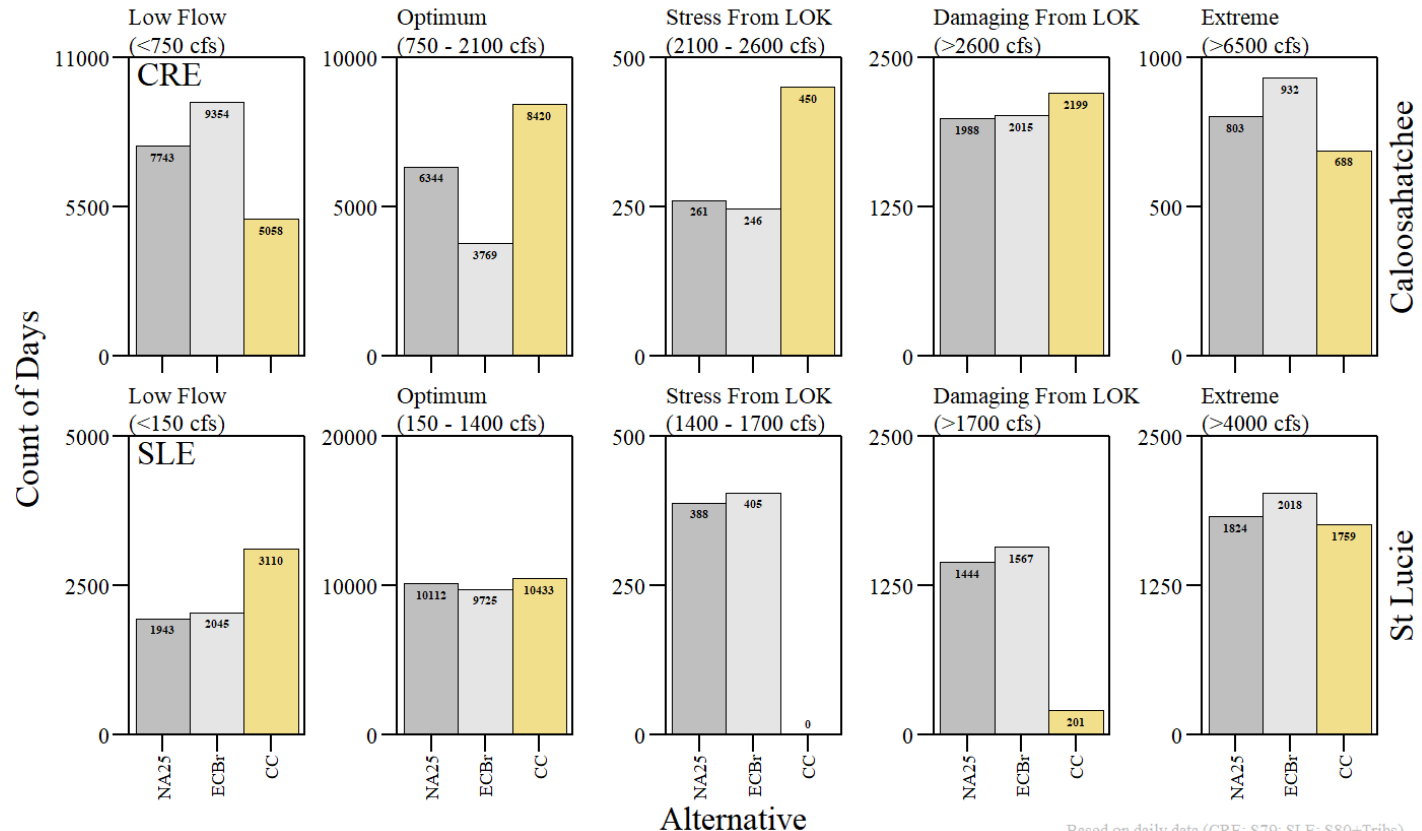
Optimum Flows CRE: ≥ 750 cfs & < 2100 cfs; SLE: ≥ 150 cfs & < 1400 cfs

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

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

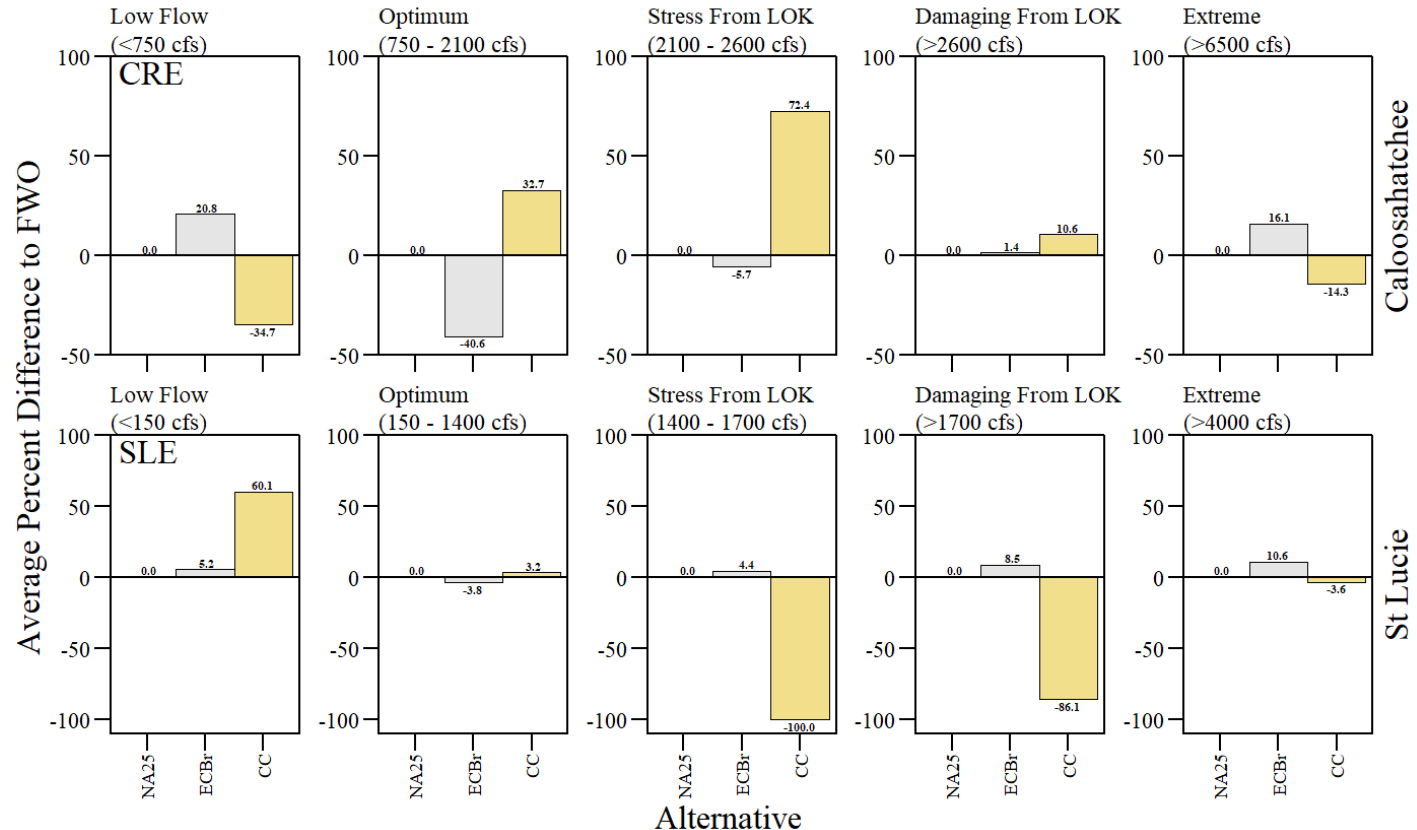
Data Source: USACE and SFWMD Interagency Modeling Center

Daily Metric



Daily salinity envelope evaluation during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries. Low, Optimum and Extreme events are from all sources.

Daily Metric



Daily salinity envelope evaluation relative to FWO (NA25) during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries. Low, Optimum and Extreme events are from all sources.

Monthly count of low, optimum, stress and damaging flow events for Caloosatchee and St Lucie estuaries based on monthly mean discharge data.

| | | Summarized Data | | | | | | Percent Different from FWO | | | | | |
|------------------|-------------------|-----------------|-------------------|-------------|---------------|-------------|---------------|----------------------------|-------------------|-------------|---------------|-------------|---------------|
| Estuary | Alt | Low Events | Optimum Events | Stress | Stress | Damaging | Damaging | Low Events | Optimum Events | Stress | Stress | Damaging | Damaging |
| | | | | Events | Events | Events | Events | | | Events | Events | Events | Events |
| | | | | From LOK | From Basin | From LOK | From Basin | | | From LOK | From Basin | From LOK | From Basin |
| CRE ¹ | NA25 ² | 212 | 225 | 37 | 19 | 70 | 61 | --- | --- | --- | --- | --- | --- |
| | ECBr | 253 | 153 | 33 | 25 | 76 | 84 | 19.3 | -32.0 | -10.8 | 31.6 | 8.6 | 37.7 |
| | CC | 149 | 243 | 96 | 15 | 54 | 67 | -29.7 | 8.0 | 159.5 | -21.1 | -22.9 | 9.8 |
| SLE ¹ | NA25 ² | 23 | 314 | 31 | 35 | 46 | 175 | --- | --- | --- | --- | --- | --- |
| | ECBr | 23 | 308 | 30 | 26 | 47 | 190 | 0.0 | -1.9 | -3.2 | -25.7 | 2.2 | 8.6 |
| | CC | 30 | 363 | 0 | 47 | 8 | 176 | 30.4 | 15.6 | -100.0 | 34.3 | -82.6 | 0.6 |

¹ CRE: Caloosahatchee Estuary; SLE: St Lucie Estuary; ² NA25 = Future without project (FWO)

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

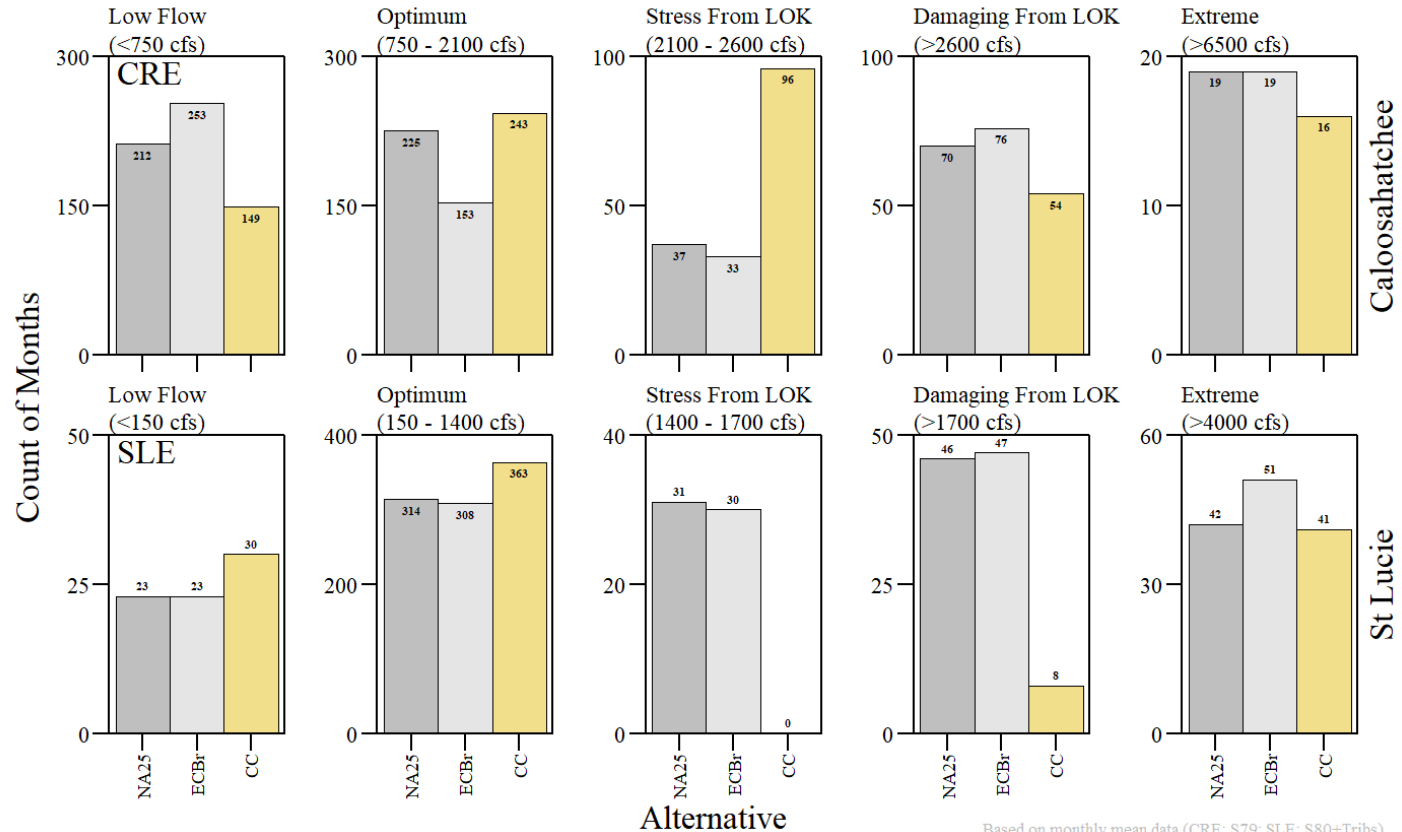
Optimum Flows CRE: ≥ 750 cfs & < 2100 cfs; SLE: ≥ 150 cfs & < 1400 cfs

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

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

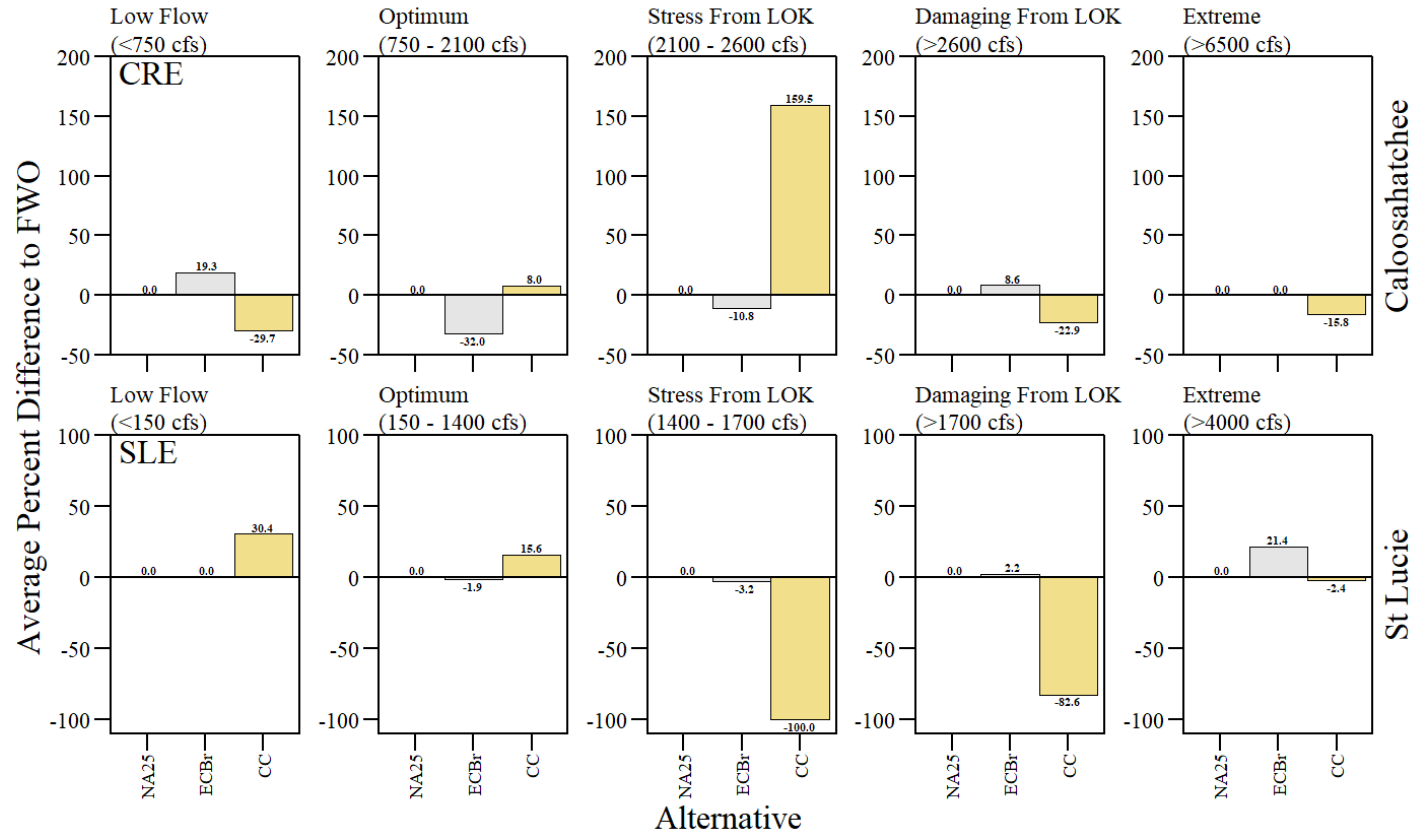
Data Source: USACE and SFWMD Interagency Modeling Center

Monthly Metric



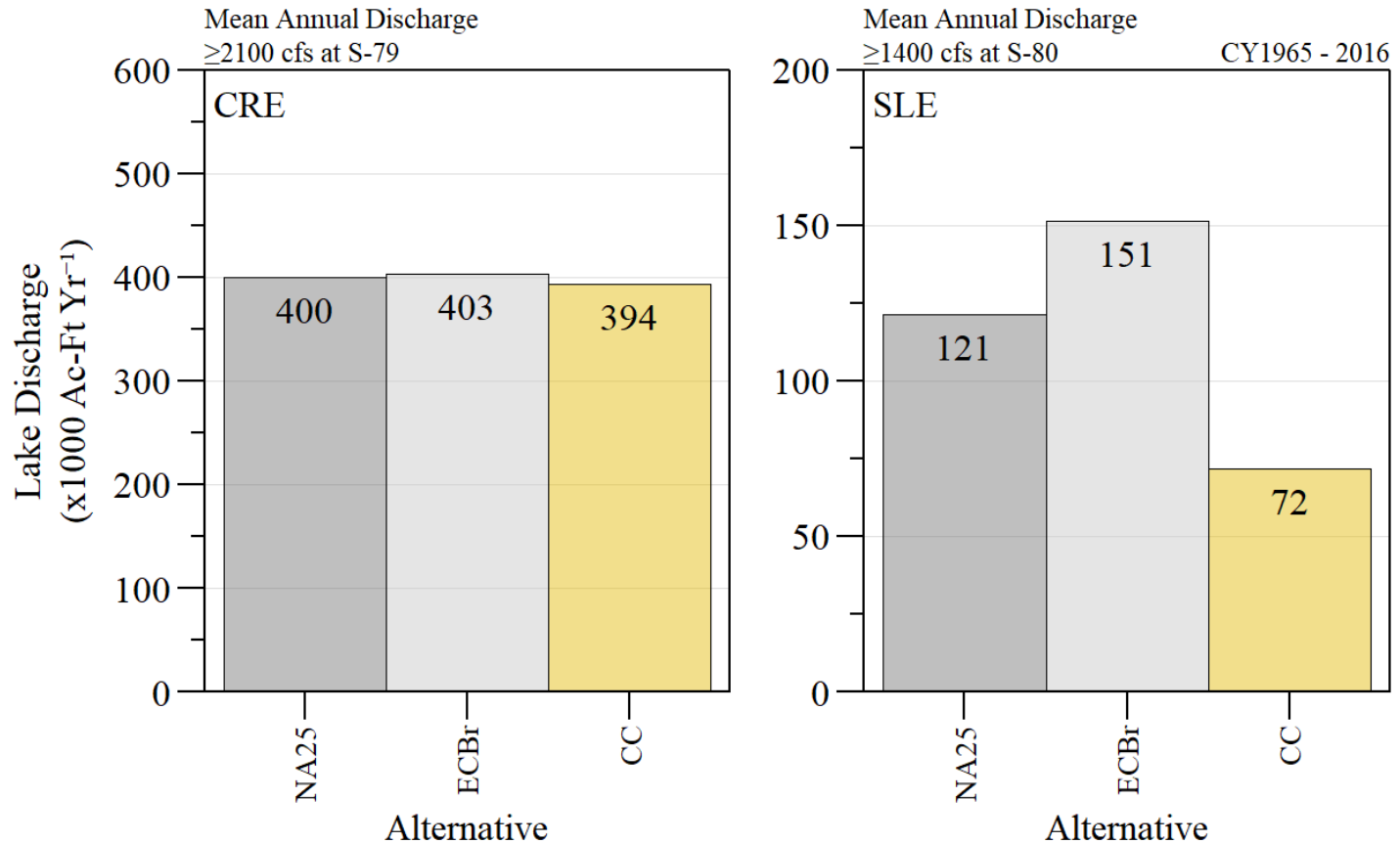
Monthly salinity envelope evaluation during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries. Low, Optimum and Extreme events are from all sources.

Monthly Metric



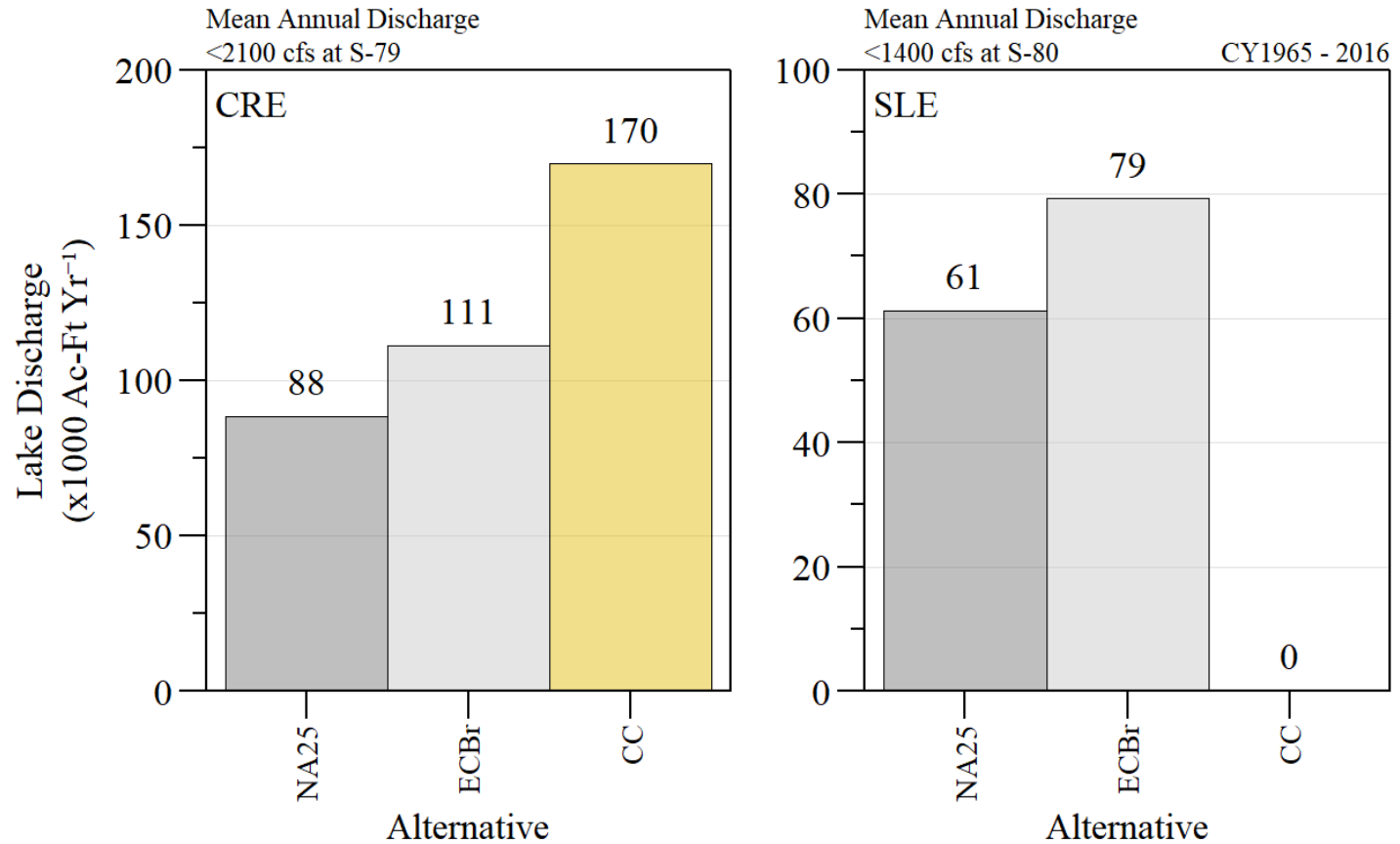
Monthly salinity envelope evaluation relative to FWO (NA25) during the simulation period of record for Caloosahatchee (top) and St Lucie (bottom) estuaries. Low, Optimum and Extreme events are from all sources.

Lake Discharges



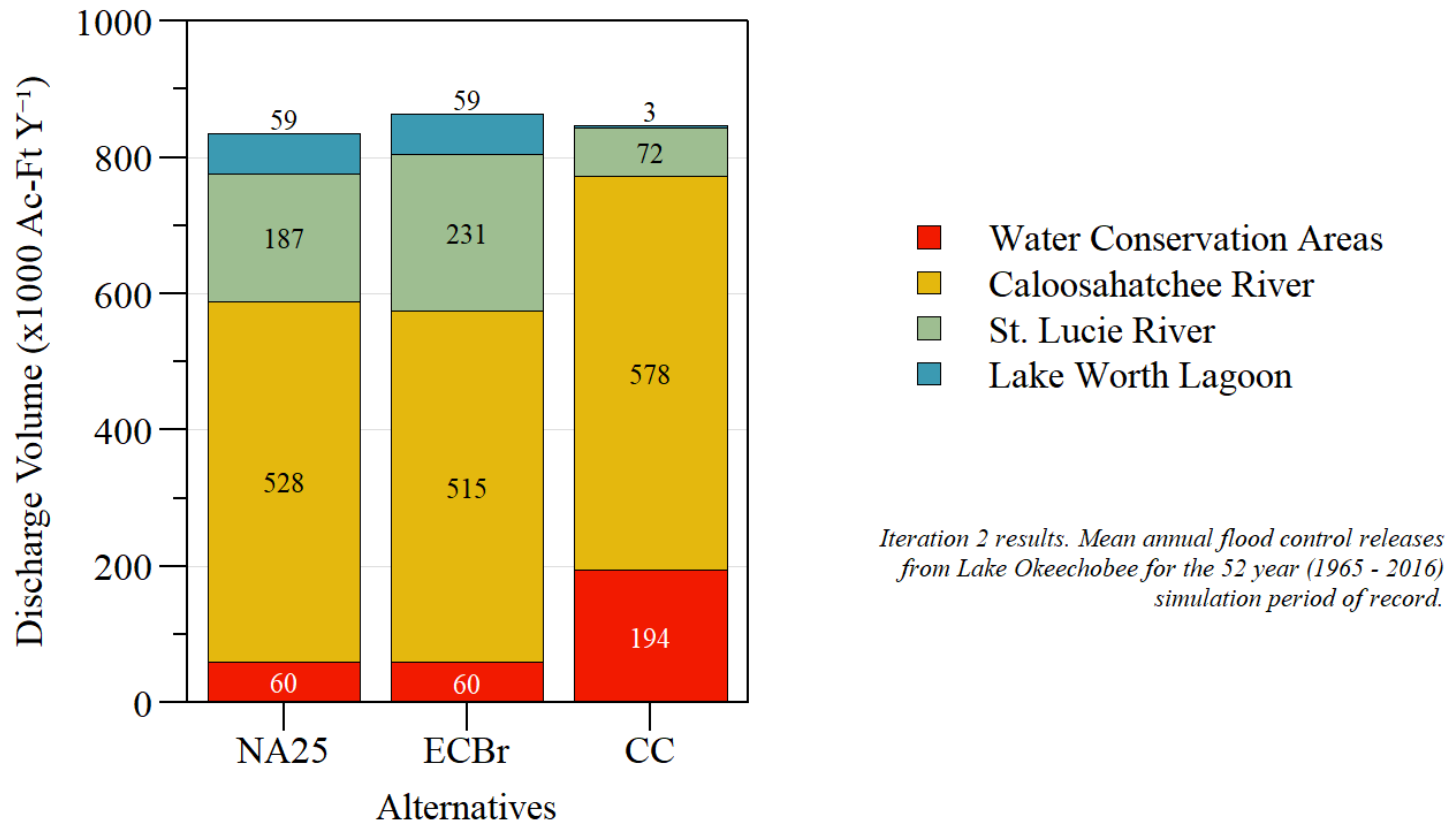
Average annual lake discharge volume over the simulation period of record when stress and damaging discharge at S79 and S80, respectively.

Lake Discharges



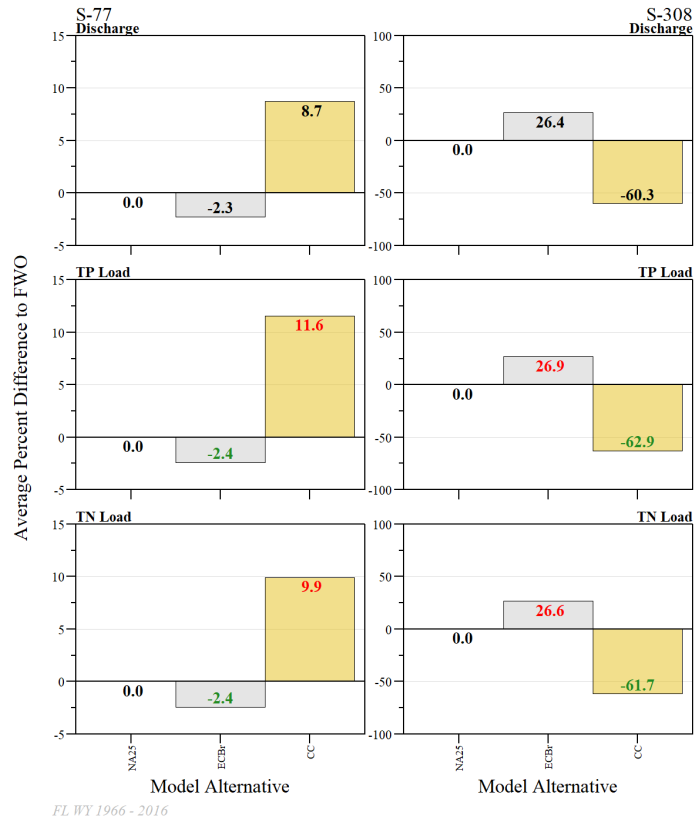
Average annual lake discharge volume over the simulation period of record when low and optimum discharge at S79 and S80, respectively.

Flood control discharges



Average annual flood control discharges from Lake Okeechobee to Water Conservation Areas and Northern Estuaries over the simulation period of record.

Load



Average percent difference from FWO (NA25) for discharge and estimated nutrient loads over the May 1965 - April 2016 (FL WY 1966 - 2016) period of simulation.