Operations of C&SF Water Control Structures Discharging to Biscayne Bay

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A dozen coastal water control structures discharge to Biscayne Bay
C&SF Operations

- Water Control Structures discharging to Biscayne Bay are part of the Lower East Coast Canals system of the Central & Southern Florida (C&SF) Project that was designed and built by USACE from 1954 to 1965.

- These structures are designed to
  - pass the design flood (40 to 100 percent of the Standard Project Flood) without exceeding upstream flood design stage, and
  - restrict downstream flood stages and discharge velocities to non-damaging levels; and
  - prevent saltwater intrusion
S28 (Canal 8) water elevation ranges (feet NGVD):
High: 2.1’ - 1.5’
Low: 1.0’ - 0.5’
S27 (Canal 7) water elevation ranges (feet NGVD):

High: 1.9’ - 1.0’
Low: 1.0’ - 0.3’
S26 Operations

S26 (Canal 6) water elevation ranges (feet NGVD):

High: 2.8’ - 2.3’
Low: 1.7’ - 1.2’
Very Wet: 1.0’ - 0.0’
S123 (Canal 100B) water elevation ranges (feet NGVD):
High: 3.5' - 2.5'
Low: 2.4' - 1.6'
S21 (Canal 1) water elevation ranges (feet NGVD):
High: 2.4’ - 1.5’
Low: 2.0’ - 1.0
S21A (Canal 102)
water elevation ranges (feet NGVD):
High:  2.2’ - 1.8’
Intermediate:  1.8’ - 1.4’
Low:  1.4’ - 1.0
S-20F (Canal 103)
water elevation ranges (feet NGVD):
High: 2.2’ - 1.8’
Low: 1.4’ - 1.0’
## Summary of Operations

### Operation Ranges (feet NGVD)

<table>
<thead>
<tr>
<th>Structure</th>
<th>High</th>
<th>Intermediate</th>
<th>Low</th>
<th>Very Wet</th>
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<tbody>
<tr>
<td>S28</td>
<td>2.1 - 1.5</td>
<td>-</td>
<td>1.0 - 0.5</td>
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<tr>
<td>S27</td>
<td>1.9 - 1.0</td>
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<td>1.0 - 0.3</td>
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<tr>
<td>S26</td>
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<tr>
<td>G93</td>
<td>3.0 - 2.1</td>
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<td>2.3 - 1.0</td>
<td>1.0 - 0.0</td>
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<tr>
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<td>2.4 - 1.6</td>
<td>-</td>
</tr>
<tr>
<td>S21</td>
<td>2.4 - 1.5</td>
<td>-</td>
<td>2.0 - 1.0</td>
<td>-</td>
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<td>S21A</td>
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<td>S20G</td>
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<tr>
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<td>1.4 - 1.0</td>
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S-21A, S-20F and S-179 are the three structures with operations for seasonal agriculture from October - April.
How Operations are Implemented

Homestead Field Station
- conducts regular site visits and field condition assessments
- Identifies hydrologic conditions, cultivation and planting activities
- Recommends appropriate actions

Water Control Operations managers (Water Managers)
- Analyzes weather conditions, tides, and water elevations
- directs operational changes as necessary
Based on October field inspection, and communication with local farmers, SFWMD implemented canal drawdown, in South Dade County, according to the following schedule:

**C-102 Basin:**
change structure S-21A to Low range; open at 1.4 ft., close at 1.0 ft.

**C-103 Basin:**
change structure S-20F to Low Range; open at 1.4 ft., close at 1.0 ft.

Change S-179 to Low range; open at 3.1 and close at 2.7
Questions?
S21A – Oct-Nov 2020
S20F – Oct-Nov 2020

![Graph showing stage and flow data for S20F-H and S20F-S-Q archives between October and November 2020.]
S179 – Oct-Nov 2020

The graph shows the stage (FT-NGVD) and flow (cfs) for S179-H and S179-S-Q ARCHIVE FLOW. The data spans from October 1st to November 4th, 2020.
Headwater/Tailwater Relationship at S21A

<table>
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<th>Station</th>
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</table>
Agricultural Land Use

- Type of agricultural land use is predicated on market conditions
C-103 Basin
Pre and Post Drawdown

Field conditions before drawdown

Field conditions after drawdown
C-103 Basin, dry season rainfall event; 1/18/11