Florida Bay Current Conditions: Another Perfect Storm?

Fred H. Sklar, Ph.D., Section Administrator
Everglades Systems Assessment
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Radar estimated total rainfall from May 2014 through August 2015 show that Taylor Slough and Florida Bay received the lowest amounts of rainfall (25-35 in) compared to the rest of the SFWMD (80-90 in).
Rainfall Deficit

- WY2010 (Wet)
- Average (WY97-14)
- WY2015
- WY2016

Cumulative Rainfall (inches)

May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr
Mapping Florida Bay Salinity

> 50 Practical Salinity Units (psu)

Difference from 2006 – 2014 Average (Jun – Aug)

Late July 2015

> 50 Practical Salinity Units (psu)
Current Ecological Conditions in Florida Bay

- Distinct patches of dead seagrass
- Little to no SAV in the mangrove creeks

Large floating rafts of dead seagrass - not typical in the bay

- Live seagrass
- Dead seagrass

July 2015

Typical

~1 mile
Current Ecological Conditions in Florida Bay

Seagrass bed with cloudy yellow color

Central Florida Bay “yellow fog” is currently under investigation

Live Seagrass

Standing Dead Seagrass

ENP and FWC have collected samples

Not present in surface waters
Location of Yellow Fog
The “Perfect Storm” Cascade Hypothesis

**Low Flow, High Salinity, High Temperature** = Increased SAV mortality

- Decomposing SAV removes oxygen
- Low oxygen conditions increase sulfide production

  - High sulfide concentrations + anoxia kills SAV

- Decomposing SAV releases nutrients

  - Nutrient release leads to algal bloom

  - Blooms deprive SAV of light

  - Low light starves and kills SAV

- Loss of SAV destabilizes sediments

  - Resuspension of sediments releases nutrients and increases turbidity.

  - Turbidity decreases available light
Getting Water to Florida Bay

ModWater
One Mile Bridge
S-356 Pump Station
8.5 Square Mile Flood Mitigation
Increment 1 Field Test - ready to operate

C-111 West Spreader Canal Project
Frog Pond Detention Area-S-200 pump station
Aerojet Canal Extension S-199 pump station

Tamiami Trail Next Steps- 2.6 Mile Bridge
FDOT and ENP - advertising for Design-Build

C-111 South Dade
S-332 pump stations
Detention areas
Taylor Slough Bridge
Degrading southern C-111 Levee
Northern Detention - Contract 8 FY16 construction

At this point in the drought, water management operations cannot solve the problem in the short term, but what about longer term?