

Minimum Flows and Levels and Reservations Team (MFLRT) Update

November 8, 2018

WRAT Meeting

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MFLRT Update Items

- MFLs priority list and schedule
- Wekiva basin MFLs in the CFWI area
- Adopted and proposed MFLs/reservations
- Recent MFLs status
- Model simulation needs/rationale review
- Measuring Sticks
 - Measuring sticks: background
 - 2015 RWSP measuring sticks summary
 - MFLRT constraints and considerations background
 - Current MFLRT-recommended measuring stick options



MFLs Priority List and Schedule

- 2018 Priority Lists and Schedules to Governing Boards
 - Draft SFWMD priority list accepted by Governing Board on 10/11/2018.
 - Draft SWFWMD priority list accepted by Governing Board on 10/23/2018.
 - Draft SJRWMD priority list to be accepted by Governing Board on 11/13/2018.
- All to be sent to DEP by 11/15/2018



Wekiva Basin MFLs in the CFWI Area

- Surface water models peer review public workshop – initial comments on 10/23/2018 in Maitland.



Adopted and Proposed MFLs/Reservations

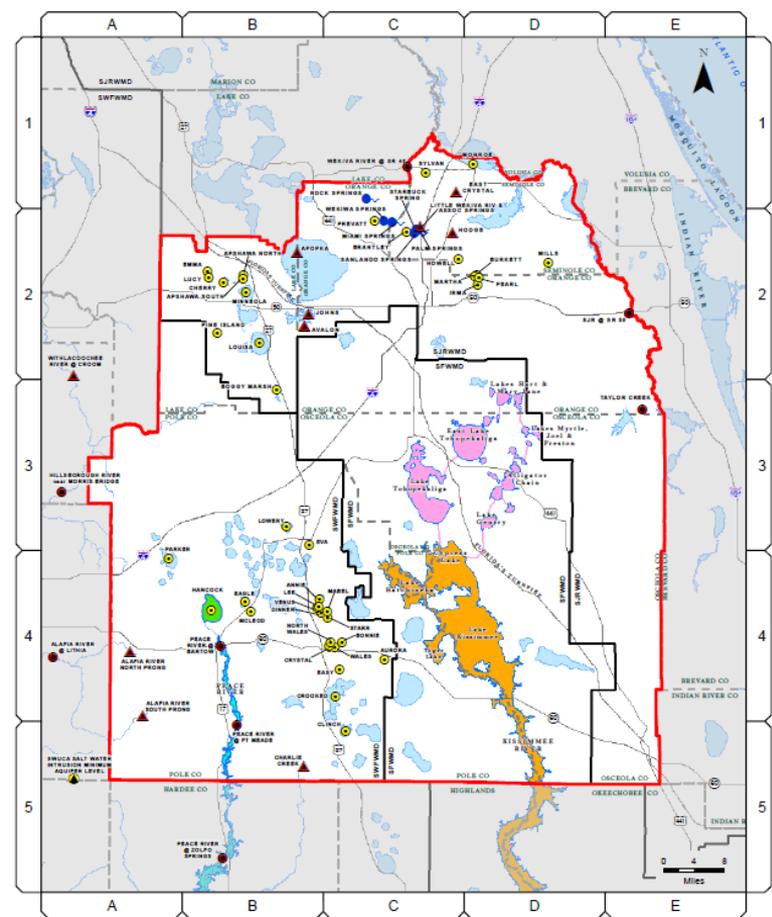
- 54 adopted MFLs within or extending into the CFWI Planning Area
- 27* MFLs or reservations within or extending into the CFWI Planning Area currently prioritized/scheduled for adoption (includes reevaluations)

* Total contingent on final water body groupings

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Figure B-1. Adopted and proposed MFLs and proposed reservations within and extending into the CFWI Planning Area.



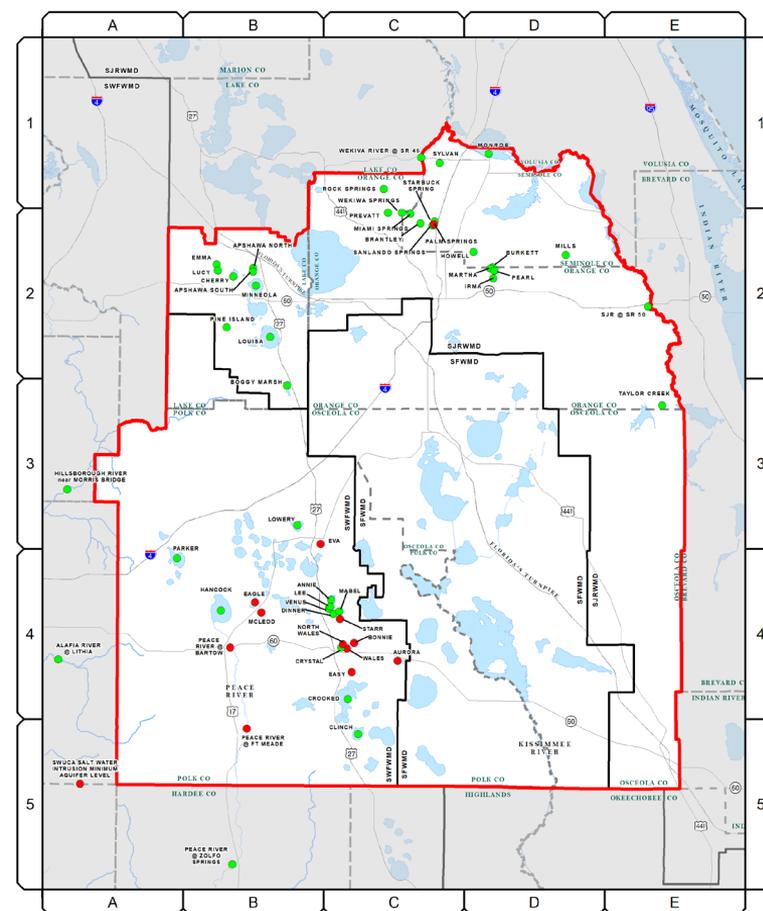
Recent MFLs Status

- 54 total: 41 met, 13 not met
- Sites not-met clustered in southwest Polk County, except for 1 site in southwest Seminole County

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Figure B-2. Recent status of adopted MFLs within and extending into the CFWI Planning Area.



MFL Sites

- Adopted, MFLs Met
- Adopted, MFLs Not Met

Central Florida Water Initiative Area

County Boundaries

Water Management District Boundary



Measuring Sticks: Background

- From CFWI 2015 RWSP:

*“The measuring sticks, identified in **Volume IA, Appendix B** and in CFWI 2013a, b, were developed for water resources including MFLs, non-MFL water bodies, wetlands and water quality, springs, rivers and groundwater system, and were used as constraints or considerations along with other regulatory considerations by the Districts to review potential environmental concerns in a uniform manner. ”*

*“To assess the potential impacts of cumulative water use on the environment and groundwater resources using the ECFT groundwater model, water resource constraints or considerations called “measuring sticks” (as discussed in **Chapter 3**) were used to identify environmental impact limits that could be used to develop planning-level estimates of groundwater availability.”*



2015 RWSP Measuring Sticks Summary

31 MFLs Constraints Identified by the GAT

- 25 adopted lake/wetland MFLs in the CFWI area.
- 6 adopted spring MFLs in the CFWI area

14 MFLs Considerations Identified by the GAT

- Proposed MFLs for Johns Lake, Lake Avalon, Lake Hiawassee
- Proposed (reevaluation) MFLs for North Lake Apshawa, Prevatt Lake, South Lake Apshawa, Sylvan Lake
- Established MFLs for Wekiva River at State Road 44
- Proposed MFLs for Upper/Middle Withlacoochee River (model boundary flux and aquifer/river groundwater exchange)
- Adopted MFLs for Upper Hillsborough River (model boundary flux)
- Adopted MFLs for Peace River (aquifer/river groundwater exchange)
- Adopted SWUCA SWIMAL (model boundary flux)
- Adopted Peace River target well water levels for the SWUCA Recovery Strategy
- Adopted Lake Wales Ridge target well water levels for the SWUCA Recovery Strategy

Non-MFL Lakes/Wetlands

- Isolated ridge wetland acreage changes based on statistical method presented for RC and 2035 in RWSP.
- Water level change from the RC at assessed wetland sites (?)

Non-MFL Springs

- 3 springs within the CFWI area without adopted MFLs

Wellfield Water Quality

- Vertical migration of poorer quality water at 5 wellfields



MFLRT Constraints and Considerations: Background

- From RWSP 2015 Appendix B (MFLs Methods):
“The potential measuring sticks were classified as MFL constraints or other considerations based on MFLs site location relative to CFWI Planning Area and ECFT groundwater model domain boundaries and the type of resource characteristic, as outlined below.
- Basically, MFLs-related constraints were adopted lake/spring MFLs in CFWI area; MFLs-related considerations were adopted/proposed river MFLs, proposed lake MFLs in CFWI area, adopted SWUCA SWIMAL, adopted (not-MFLs) SWUCA recovery target wells
- Non-MFL-related considerations were non-MFLs lakes/wetlands, non-MFLs springs, and wellfield water quality

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Current MFLs-Related Measuring Stick Options: Descriptions

38 MFLs Constraints

- Adopted MFLs for 31 lakes/wetlands within the CFWI Planning Area.
- Adopted MFLs for six springs within the CFWI Planning Area.
- Adopted MFLs for one river segment within the CFWI Planning Area.

Up to 16 MFLs-Related Considerations

- As available, MFLs that may be proposed but are not yet adopted for three lakes within the CFWI Planning Area.
- As available, revised MFLs that may be proposed but are not yet adopted for three lakes with established MFLs within the CFWI Planning Area (reevaluation MFLs).
- As available, revised MFLs that may be proposed but are not yet adopted for one river segment with established MFLs within the CFWI Planning Area (reevaluation MFLs).
- As available, revised MFLs that may be proposed but are not yet adopted for six springs with established MFLs within the CFWI Planning Area (reevaluation MFLs).
- An adopted Saltwater Intrusion Minimum Aquifer Level (SWIMAL) for the Most Impacted Area of the Southern Water Use Caution Area (SWUCA) within the SWFMWD.
- An established target regulatory water level based on five UFA wells used to characterize ground water levels below Lake Wales Ridge Lakes where MFLs have been established and are being recovered.
- An established target regulatory water level based on five Upper Floridan aquifer (UFA) used to characterize groundwater levels below the upper Peace River where MFLs have been established and are being recovered.

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Current MFLs-Related Measuring Stick Options: Table

Table B-6. MFL constraints and considerations identified as potential measuring sticks for initial evaluations of regional groundwater availability in the CFWI Planning Area

Map Grid ^a	Water Body/ Regulatory Well Target Name	County	Water Management District ^b	Year Adopted ^c	Recent MFLs (or Regulatory Target) Status
MFL Constraints					
Adopted Lake and Wetland MFLs within the CFWI Planning Area					
B-4	Annie, Lake	Polk	SWFWMD	2008	Met
C-4	Aurora, Lake	Polk	SWFWMD	2018	Not Met
B-3	Boggy Marsh	Lake	SJRWMD	2001	Met
C-2	Brantley, Lake	Orange	SJRWMD	2001	Met
D-2	Burkett Lake ^d	Orange	SJRWMD	2002	Met
B-2	Cherry Lake	Lake	SJRWMD	2002	Met
C-5	Clinch, Lake	Polk	SWFWMD	2017	Met
C-4	Crooked Lake	Polk	SWFWMD	2017	Met
B-4	Eagle Lake	Polk	SWFWMD	2017	Not Met
C-4	Easy, Lake	Polk	SWFWMD	2018	Not Met
B-2	Emma, Lake	Lake	SJRWMD	2003	Met
B-3	Eva, Lake	Polk	SWFWMD	2018	Not Met
B-4	Hancock, Lake ^d	Polk	SWFWMD	2016	Met
D-2	Howell Lake ^d	Seminole	SJRWMD	2001	Met
D-2	Irma, Lake ^d	Orange	SJRWMD	2002	Met
B-2	Louisa, Lake	Lake	SJRWMD	2000	Met
B-3	Lowery, Lake	Polk	SWFWMD	2018	Met
B-2	Lucy, Lake	Lake	SJRWMD	2003	Met
B-4	McLeod, Lake	Polk	SWFWMD	2017	Not Met
D-2	Martha, Lake ^d	Orange	SJRWMD	2002	Met
D-2	Mills Lake	Seminole	SJRWMD	1998	Met
B-2	Minneola, Lake	Lake	SJRWMD	2002	Met
B-2	North Lake Apschawa	Lake	SJRWMD	2002	Met
A-4	Parker, Lake	Polk	SWFWMD	2006	Met
D-2	Pearl, Lake ^d	Orange	SJRWMD	2002	Met
B-2	Pine Island Lake	Lake	SJRWMD	2001	Met
C-2	Prevatt Lake	Orange	SJRWMD	1998	Met
B-2	South Lake Apschawa	Lake	SJRWMD	2002	Met
C-4	Starr, Lake	Polk	SWFWMD	2017	Not Met
C-1	Sylvan Lake	Seminole	SJRWMD	1998	Met
C-4	Wailles, Lake	Polk	SWFWMD	2017	Not Met
Adopted River MFLs within the CFWI Planning Area					
C-1	Wekiva River at State Road 46	Lake/Seminole	SJRWMD	1992	Met

Map Grid ^a	Water Body/ Regulatory Well Target Name	County	Water Management District ^b	Year Adopted ^c	Recent MFLs (or Regulatory Target) Status
Adopted Spring MFLs within the CFWI Planning Area					
C-2	Miami Springs ^e	Seminole	SJRWMD	1992	Met
C-2	Palm Springs ^e	Lake	SJRWMD	1992	Not Met
C-1	Rock Springs ^e	Orange	SJRWMD	1992	Met
C-2	Sanlando Springs ^e	Seminole	SJRWMD	1992	Met
C-2	Starbuck Spring ^e	Seminole	SJRWMD	1992	Met
C-2	Wekiwa Springs ^e	Orange	SJRWMD	1992	Met
Considerations					
Proposed Lake MFLs within the CFWI Planning Area					
B-2	Avalon, Lake or Johns Lake ^f	Orange	SJRWMD	na	na
C-1	East Crystal Lake ^f	Seminole	SJRWMD	na	na
C-2	Hodge, Lake ^f	Seminole	SJRWMD	na	na
Proposed, Revised Lake MFLs within the CFWI Planning Area (Reevaluation MFLs)					
C-2	Prevatt Lake ^f	Orange	SJRWMD	1998	Met
B-2	South Lake Apschawa ^f	Lake	SJRWMD	2002	Met
C-1	Sylvan Lake ^f	Seminole	SJRWMD	1998	Met
Proposed, Revised River MFLs within the CFWI Planning Area (Reevaluation MFLs)					
C-1	Wekiva River at State Road 46 ^f	Lake/Seminole	SJRWMD	1992	Met
Proposed, Revised Spring MFLs within the CFWI Planning Area (Reevaluation MFLs)					
C-2	Miami Springs ^g	Seminole	SJRWMD	1992	Met
C-2	Palm Springs ^g	Lake	SJRWMD	1992	Not Met
C-1	Rock Springs ^g	Orange	SJRWMD	1992	Met
C-2	Sanlando Springs ^g	Seminole	SJRWMD	1992	Met
C-2	Starbuck Spring ^g	Seminole	SJRWMD	1992	Met
C-2	Wekiwa Springs ^g	Orange	SJRWMD	1992	Met
Adopted Aquifer MFLs (Reevaluation MFLs)					
A-5	SWUCA Salt Water Intrusion Minimum Aquifer Level ⁱ	Hillsborough/ Manatee/Sarasota	SWFWMD	2007	Not Met
Regulatory Wells					
See Figure B-3	Ridge Lakes Regulatory Wells ^k	Polk/Hardee	SWFWMD	2007	Target Met
	Upper Peace River Regulatory Wells ^k	Polk	SWFWMD	2007	Target Met

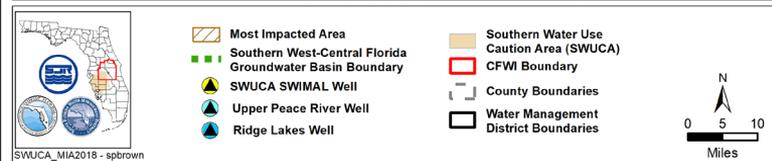
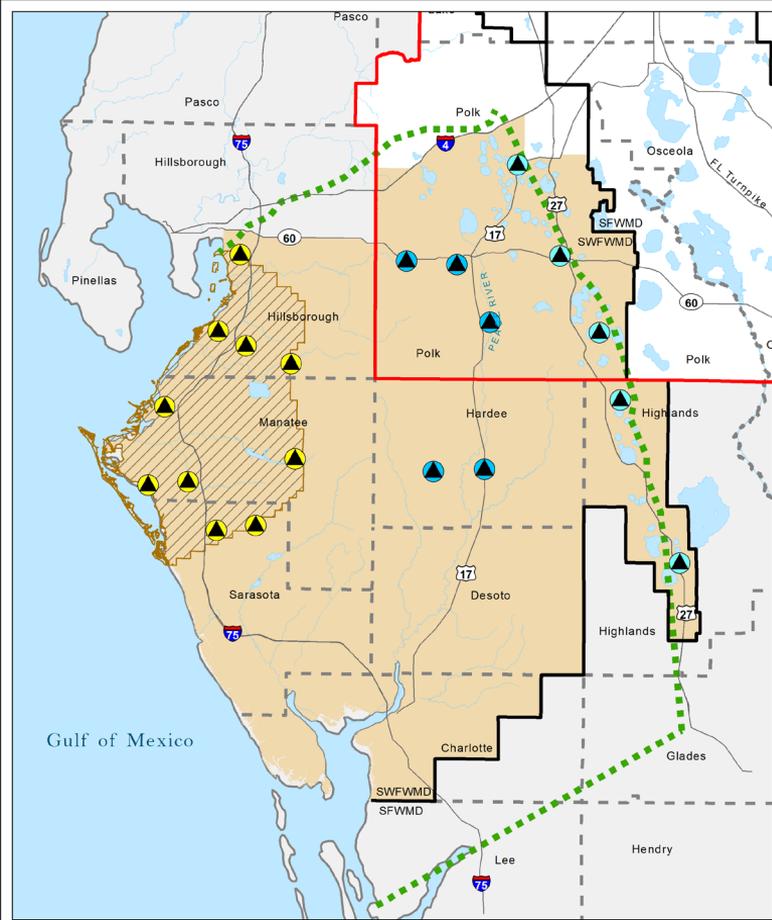
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Current MFLs-Related Measuring Stick Options: Table Footnotes

- ^a Map grid refers to **Figure B-1**, except for the Ridge Lake and Upper Peace River Regulatory Wells, which are shown in **Figure B-3**.
- ^b South Florida Water Management District (SFWMD), St. Johns River Water Management District (SJRWMD) and Southwest Florida Water Management District (SWFWMD).
- ^c Date listed is effective date for the MFLs rule; in some instances, adoption may have occurred in the preceding year.
- ^d No significant Floridan aquifer connection (NSFAC).
- ^e Although minimum spring flows were set primarily to cumulatively maintain minimum flows in the Wekiva River System, the assumption was also made that these flows would be sufficient to protect the ecology of individual springs.
- ^f MFLs will be developed for either Lake Avalon or Johns lake, but not both.
- ^g As available.
- ^h Reevaluated spring MFLs may be consolidated with reevaluated Wekiwa Springs MFLs
- ⁱ Reevaluated spring MFLs may be consolidated with reevaluated Little Wekiva River MFLs
- ^j Well sites associated with the adopted Southern Water Use Caution Area (SWUCA) Salt Water Intrusion Minimum Aquifer Level are outside of the CFWI Planning Area, but groundwater withdrawals within the CFWI Planning Area may affect water levels in the wells.
- ^k Some established Lake Wales Ridge and Upper Peace River regulatory wells associated with the Southern Water Use Caution Area (SWUCA) recovery strategy are outside of the CFWI Planning Area, but groundwater withdrawals within the CFWI Planning Area may affect water levels in the wells.

SWUCA MIA, SWIMAL and Regulatory Wells



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Figure B-3. Southern Water Use Caution Area (SWUCA), Most Impacted Area of the SWUCA and the Southern West-Central Florida groundwater basin relative to the CFWI Planning area.

Note: Regulatory wells associated with the Saltwater Intrusion Minimum Aquifer Level (SWIMAL) adopted for the Most Impacted Area of the SWUCA, and regulatory wells in the Upper Peace River and Lake Wales Ridge area of the SWUCA established as part of the SWUCA Recovery Strategy are also shown.