

## Silver Springs MFL – Public Comments and SJRWMD Responses

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On March 16, 2017, SJRWMD staff held a rule workshop meeting to provide information to the public about the Silver Springs MFL and to receive public comment. The public was informed that they could comment on the proposed MFL in one of three ways: providing comments at the meeting (written or verbal), sending an email to [SilverSpringsMFLs@sjrwmd.com](mailto:SilverSpringsMFLs@sjrwmd.com), or submitting comments via the District's website at <http://www.sjrwmd.com/facts/SilverSpringsMFL.html>.

As of April 5, 2017 the SJRWMD has received 24 comments regarding the Silver Springs MFL (see attached for table of specific comments). The list below provides a summary of public comments, paraphrased by general comment type. Also, below is the SJRWMD response to each general comment, and the specific comment number covered by this response (i.e., the comment number refers to the specific comments in the attachment).

**Public Comment:** Silver Springs is unique, special and should be protected, and there should be no further reduction from current flow. (Comments 1, 3, 5, 6, 7, 8, 9, 11, 12, 14, 15, 16, 17, 18, 20, and public workshop comments)

**SJRWMD Response:** SJRWMD agrees that Silver Springs and Silver River are very important water resources for the State. We are setting an MFL, in part because of the special Outstanding Florida Springs status of Silver Springs. Our MFL determination has resulted in recommended minimum flows and levels that would allow no more than a 6% reduction in flow from the no-pumping or pre-groundwater pumping condition. Based on the best information available, this 6% reduction will protect instream and floodplain environmental values from significant harm due to pumping. The recommended minimum flow and level will result in a very small change in channel or floodplain inundation, and a very small change in instream critical velocities.

**Public Comment:** Silver Springs should be in Recovery; 30% of historical flow should be recovered. (Comment 2, 23, and public workshop comments)

**SJRWMD Response:** Based on our best available information, including the NDMv5 groundwater model, indicate there has been approximately a 3.5% reduction in flow at Silver Springs are due to groundwater withdrawals. The proposed MFLs for Silver Springs would allow an additional 2.5% reduction in flow due to groundwater withdrawals through 2024. Projected water use beyond this additional 2.5% is addressed with the proposed Prevention Strategy for Silver Springs. The Prevention Strategy prevents the Silver Springs MFLs from being violated due to consumptive uses of water, while simultaneously providing sufficient water supplies for all existing and projected reasonable beneficial uses.

**Public Comment:** Reservations have been expressed about the specific groundwater model used for assessment of the Silver Springs MFL. The groundwater model should be peer reviewed. (Comment 10; and public workshop comments)

**SJRWMD Response:** Version 5 of the Northern District Groundwater Flow Model (NDMv5) was a collaborative effort between SJRWMD and SWFWMD. The objective of the project was to update

NDM Version 4 to include hydrogeologic and hydraulic data that became available after completion of this previous version of the model. Specifically, new data/information that was incorporated in NDMV5 included the following:

- Upper Floridan aquifer hydraulic properties obtained from large scale/long duration aquifer performance test(s) performed in northeastern Marion County
- Refinement of groundwater levels in the surficial aquifer in the Lake Wales Ridge region of Lake County
- Add springs refinements
  - Added Belton’s Millpond Spring (Sumter County) and Blue Spring (Levy County), and and/of refined stages for several small submerged springs in the Ocklawaha River (Wells Landing, Catfish, Blue, Riversites, Tobacco Path, Fish Hook 1 and 2, Bright Angel, and Sims, all in Marion County)
- Incorporated updated flow and/or stage data for: Silver Springs (Marion County); Gum Springs (Sumter County); Seven Springs (Pasco County); and Bugg Spring (Lake County)

Following the updates to the model, the changes and resultant model and outputs were reviewed by Peter Andersen, P.E., of Tetrattech and Mark Stewart, PhD, P.G., of the University of South Florida. Their findings were compiled in the single document provided to the Districts titled “Peer Review of the Northern District Model Version 5 and Predictive Simulations, October 10, 2016, Final Report.” The documents were signed and sealed by both authors on October 12, 2016.

The NDMv5 represents the best available tool for estimating the effect of water use on Silver Springs flow. Current pumping is based on the 2010 pumping condition. This represents an extensively verified water use data set used to assess pumping impacts to the MFL with the NDMv5 groundwater model. Pumping during more recent years has actually been less than the amount pumped in 2010. Therefore, the 2010 data set represents a conservative estimate of the effects of current pumping on spring flow.

**Public Comment:** SJRWMD should not allow new well drilling near Silver Springs springshed. (Comment 19)

**SJRWMD Response:** Water users seeking withdrawal from any proposed new wells (six-inches in diameter or greater at land surface) or whose use will be greater than 100,000 gallons per day on an average annual basis must demonstrate that the proposed water use will not adversely impact water resources, including Silver Springs as a part of the consumptive use permitting process. The proposed prevention strategy provides the further protection that any increase in water use from the Upper Floridan aquifer (by new or existing users) after 2024 will need to off-set or mitigate any impacts to Silver Springs.

**Public Comment:** Southwest Florida Water Management District’s Rainbow MFL should be considered in Silver Springs MFLs analysis. (Comment 21)

**SJRWMD Response:** SJRWMD collaborated with Southwest Florida Water Management District (SWFWMD) on the use of the NDMv5 groundwater model for MFLs assessment of Rainbow Springs and Silver Springs.

Impacts of water uses within both the Rainbow Springs and Silver Springs springsheds are evaluated with the Northern District Groundwater Flow Model (NDMV5), which provides a single tool that is

used by both SJRWMD and SWFWMD. SJRWMD and SWFWMD are also entering into a Memorandum of Understanding to coordinate on consumptive use applications in each district that have the potential to impact either Rainbow Springs or Silver Springs.

**Public Comment:** Why Injection of sewage treatment water in the aquifer to restore the flow instead of just saying no to more permits? (Comment 21)

**SJRWMD Response:** The proposed Pine Oaks Wetland Recharge project will benefit both water quality and quantity within Silver Springs. Currently, treated wastewater from the City of Ocala water reclamation facilities is disposed of, in part, at area sprayfields where losses due to evapotranspiration are significant and nitrate removal is relatively poor. The recharge wetlands are expected to remove approximately 95% of the nitrates in the treated wastewater and recharge approximately 96% of the flow to the Upper Floridan aquifer.

On the regulatory side, the SJRWMD is committed to ensuring that the additional permitting of any new groundwater withdrawals does not result in a violation of the Silver Springs MFLs. Therefore, all existing consumptive use permits whose withdrawals impact flow at Silver Springs will be limited to their 2024 groundwater demand. The 2024 demand for Marion County was estimated to be the sustainable groundwater yield from the Upper Floridan aquifer without causing significant harm to the spring. Any withdrawals in excess of the 2024 demand must either come from alternative sources or the impacts associated with the withdrawals must be completely offset. This applies to new permits as well.

**Public Comment:** How can the recommended MFL allow additional available water, when a water shortage is recommended for Marion County? (Comment 22)

**SJRWMD Response:** The recommended MFLs for Silver Springs is based on the water necessary to prevent significant harm over the long-term due to groundwater withdrawals. In contrast, the water shortage warning is for a short-term event. There will periods of surplus water (for example, during the periods of high rainfall in the 1960s and 1970s) and periods of drought (for example, after deficit rainfall from the 1970s to early 2000s). The MFL does not allow additional water withdrawal during periods of high rainfall or reduce withdrawal during periods of drought, but instead determines the amount of available water over the long term. MFLs provide the tool for long-term management via day-to-day decisions (permit issuance recommendations) and water shortage orders provide a short-term tool to reduce water use until groundwater levels and rainfall return to acceptable levels.

**Public Comment:** The Silver Springs MFL is not focused on the most sensitive criteria, the instream criteria. (Comment made at public workshop)

**SJRWMD Response:** We are using floodplain environmental criteria to protect both floodplain and in-stream aquatic habitat, because the floodplain is more sensitive to withdrawal, and thus more constraining. A 6% reduction in mean long-term flow equates to about 1.2% reduction in in-stream habitat inundation. Instream and spring habitats (e.g., fish and invertebrate habitats) are protected by maintaining 98.8% of no-pumping condition water levels within the channel. The 6% change in mean flow also equates to extremely small (< 0.05 ft/sec) changes in critical velocities associated with

important ecological functions (e.g., metabolism, algae scour and sediment transport). This small change is approaching the accuracy limits of the hydraulic model used for estimation.

Comment No.	Date	Name (First)	Name (Last)	Email	Comment
1	3/14/17	Ta	Berry	taberry55@gmail.com	We go to Silver Springs frequently and really enjoy it. Please don't take any more water away, we need the water in the springs
2	3/15/17	Maya	Zacharow	mscohier@gmail.com	The SJRWMD must adopt a prevention and recovery plan for Silver Springs to return up to 30% of its historic flow (recommended MFL = 750 cfs) and not the opposite where the flow to Sulvet Springs is reduced!
3	3/15/17	Nanette	Soistman	nanmules@windstream.net	We cannot continue to draw down our precious springs. Silver Springs has limited capacity by already . Enough already. De desalinization needs to be accomplished to meet increasing water demands.
4	3/15/17	Evi	Pickavance	eviflorida@bellsouth.net	The MFL is the Fox, guarding the hen house .....
5	3/15/17	Mike	Adams	mdadams@defenders.org	<p>Dear Sir or Madam,</p> <p>I represent Defenders of Wildlife, a national nonprofit advocacy organization, focused on protecting imperiled wildlife, their habitat and biodiversity. We formally oppose approving reduced minimum flows and levels (MFLs) and approval of any additional consumptive use water withdrawals from the Silver River watershed and source aquifer at Silver Springs. Both are designated Outstanding Florida Waters (OFWs) for their many exceptional quality natural attributes.</p> <p>We believe reducing MFLs and permitting additional consumptive use withdrawals would be significantly harmful to the water resources and overall ecology of the region. Any further degradation of one of our state's historically premier, first magnitude, Silver Springs would not only adversely affect imperiled wildlife, such as the manatee, but it would exacerbate future drinking water challenges and compromises to our state's ever growing human population.</p> <p>Thank you in advance for considering our comments. We look forward to advocating with the District and others to prevent further loss of imperiled species and their essential habitats associated with Florida's unique and fragile springs systems.</p> <p>Please add these comments to the public record at the St. Johns River Water Management District workshop being held at the Marion County Commission Auditorium, in Ocala Florida, March 16, 2017.</p> <p>Sincerely,  Defenders of Wildlife  Mike Adams  Senior Florida Representative  Northeast Florida Field Office</p>

6	3/16/17	Holly	Nicholson	hmnichol@gmail.com	<p>I have been kayaking the Silver River from the park for two years. I have never seen the river level as low as it is this year, the river looks like it is two feet below it's usual level. The paddle path is barely passable as the kayak actually touches the Elle grass.</p> <p>We have seen five manatees in the springs this year and a great many birds.</p> <p>Please do not take any more water from this fantastic natural springs.</p> <p>It brings in a little t of tourism and revenue to this area.</p> <p>Sincerely,  Holly Nicholson  2401 SE 176 Ave  Silver Springs,  Fl 34488</p>
7	3/16/17	Jim	Pruitt	jimdpruitt@yahoo.com	<p>I grew up very close to Silver Springs. This spring is an incredible resource. To give OUR water to a few individuals, for their profit, at OUR expense is shameful, and should be criminal. As you are aware, the flow of Silver Springs has declined, in the last 40 years, by at least one third.</p> <p>Please show courage..... do not vote for more water withdrawals.</p>
8	3/16/17	sharon	Bartholomew	slab59@yahoo.com	<p>Please do not compromise Silver Springs further!!!!</p>
9	3/16/17	William and Peggy	Goldberg	pg.goldenimages@gmail.com	<p>Are you people kidding???? Here we have an impaired spring and ecosystem, with decreased flows, an extended drought - that will be more of the norm because of climate change- and more people moving in to use more water, and you honestly think we can take more from Silver Springs? How stupid are we? When will you stand up to the climate denier - we know you are afraid of losing your jobs if you even admit to it- but when are you all going to stand up to what is wrong and do the right thing??</p> <p>Deny any reductions in flow as acceptable!</p> <p>How can you then have an article in the paper stating that " because of the extended drought, you want all of us to reduce water consumption". This whole thing makes absolutely no sense!</p>
10	3/16/17	William	Goldberg	slimschwartz@hotmail.com	<p>Significant doubt and reservations have been expressed about the new SJRWMD hydrologic modelling for the significant waterways that is so different from the previous iteration. Is the new model a natural result of more accurate data and updated model calculations or is it the result of undue political influence from a polarized state government? Since there seems to be no was to scientifically verify the new model and its implications - via controlled experiments or validation in other similar instances that have yielded usable data - what about an independent, non-partisan panel of experts in the hydrology/geology field that could analyze the historical data, the new hydrology model and apply their expertise to the issue. Both sides would recognize the removing politics and inflammatory rhetoric would be productive and might yield a result that all stakeholders could get behind? This process has been generally accepted in a variety of venues and is worth investigating. After all, according to the Ocala Star Banner, the state has spent more than 300 million dollars in outside legal fees to defend state issues - and isn't the future of the natural water resources at least as important?</p>

11	3/16/17	Garth	Brewster	seatimeflip@windstream.net	Please have the wisdom to understand we can not continue to draw water from already stressed areas. It's like adding more weight to a sinking ship. I have lived in Florida for sixty years, we can either preserve these natural resources or have a hay day and watch them die. Thank you for any consideration. We simply have too much to loose. Garth Brewster
12	3/16/17	Mark	Rubin	rubin1052@yahoo.com	Please leave the river as it is. I have been going to Silver Springs since you could swim in it in the 60s. It is a unique place and needs to be protected.
13	3/16/17	Laure	Staples	laurenleesc@gmail.com	I am a Florida resident and registered voter who is having my wedding at Silver Springs State Park in April (I am contributing about \$20k to the local economy).  Over the past year, in the visits I've made to Silver Springs in planning my wedding, I've visibly seen increased algae and eutrophication in the system. My qualitative observations themselves are anecdotal, but the sound research from the US Geological Survey and the Howard T Odum Springs Institute support that the SJRWMD allowing an additional 10 MGD withdrawal in this new MFL is about 195 MGD too much when compared with historic flows that the system has not experienced since the 70's. We should be cutting back on demand through tangible water reclamation efforts instead of allowing more demand for short-term politicians to reach their immediate job numbers, nevermind the longterm job number decrease due to loss of tourism and kayaking outfitters.  Reference: <a href="https://howardtodumfloridaspringsinstitute.wildapricot.org/resources/Pictures/Silver%20MFL%20FSI%20Fact%20Sheet_FINAL.pdf">https://howardtodumfloridaspringsinstitute.wildapricot.org/resources/Pictures/Silver%20MFL%20FSI%20Fact%20Sheet_FINAL.pdf</a>
14	3/16/17	Yvonne	Johnson	yjohnson@cox.net	Since 1979, I have been on the river scuba diving and kayaking. What the quality of the water is now as compared to those many years ago is horrendous. Perhaps those seated on this decision making body have not seen the changes, but they are obvious. What you do regarding the water slows will either save what is so precious or condemn it to its ultimate distruction. Please do not let potitics influence this decision for you. Use your God given intelligence and sense of respect and duty to the people of Florida to not reduce the water flow any lower than it is. The wildlife,aquatic animals, forests and we, the people, implore you to do so.
15	3/16/17	Carol	Luger	robinannie.luger@gmail.com	Please do not reduce the MFL for Silver Springs. Be tough-infinite growth isn't possible.

16	3/16/17	Robert E.	Ulanowicz	ulan@umces.edu	<p>The very idea of increasing withdrawal from a system that is clearly in "recovery" is simply nonsensical! It is making a bad situation worse. How can one hope to facilitate recovery by increasing consumption?!</p> <p>The District is already being sued by the Florida Springs Council for not addressing recovery as part of the North Florida Regional Water Supply Plan. Further litigation is sure to follow if you move to increase pumping from the Silver Springs springshed. Why multiply your legal woes?</p> <p>R. Ulanowicz Board Member H.T. Odum Florida Springs Institute</p>
17	3/16/17	Karen	Cosner	krincosner@gmail.com	<p>We are on the cusp of destroying our wonderful Springs. There is work to be done to save our Springs which offer us the best of FLorida, beauty and grace and a boost to our lives, and economy. The research is clear. The aquifer cannot sustain its health, if there is continued permitting and destruction of our waters. Please stand for the environment and all people to protect our legacy. Thank you</p>
18	3/16/17	sara	batton	nonnie5870@hotmail.com	<p>the springs and river wonders are a large tourist industry in the state. If installing the Sabal Trail is not enough of an ecological damage and future hazard, continuing to drain and sell for profits to no one but industry, will not only damage the springs, but the aquafer who we ALL depend on our water from. Stop the damage to our beautiful flora and fauna. The state needs to continue to preserve our natural wonders found no where else in the US</p>
19	3/16/17	Martin	Helgerson	Marty@awsllc.net	<p>Stop the drilling of new wells. Save the springs.</p>
20	3/16/17	Sam	Easley	diversmakeadifference@gmail.com	<p>I am steadfastly against additional withdrawals from the Silver Springs system. I urge you to consider recommendations from the Florida Springs Institute on the matter as their research and integrity on the subject are unmatched. Thank you, Sam Easley</p>

21	3/18/17	Linda	Bystrak	linda@bystrak.com	<p>SWFWMD is also going to allow a reduction in Rainbow Springs flow. It is well known that the Rainbow and Silver springsheds overlap, and therefore what one WMD does to one spring, affects the other. Yet neither WMD has discussed this problem with the other before deciding to allow more withdraws. This is very poor science.</p> <p>Plus, why should we spend Amendment 1 money on injecting reclaimed water into the aquifer to increase the Silvers flow, when it would save taxpayers millions of dollars just to say no to more permits? FDEP and Ocala is spending money to remove septic tanks and SJRWMD wants to inject sewage treatment water in the aquifer to restore the flow?</p>
22	3/16/17	Tom	Cartwright	written comment at public workshop	Can someone explain how MFL can be reduced when a recent news item stated a warning of water shortage in the county?
23	3/28/17	Greg	Ballinger	gbdrother@gmail.com	<p>There is clearly sufficient damage now, to raise the MFL rather than lower it. The St. Johns River Water Management District should be working to increase flows to a healthy level not accepting lower levels and the existing degradation.</p> <p>At this point the SJRWMD should be looking at restoration not prevention.</p>
24	3/30/17	Ted	Mikalsen	tsmikalsen@bellsouth.net	<p>After the SJRWMD Staff denied politically well-connected billionaire's Sleepy Lands CUP application on the basis of saying modeling which indicated that the Silver Springs shed could not tolerate additional withdrawals were "disappeared, cognizant new staff members using a "improved model" managed to rationalize an additional 1.22 mgd (1.88 cfs) until 2023 when the modeled capacity of the aquifer would be attained. Now "newer and improved" modeling in the employed for the the proposed MFL indicates that there is an available freeboard of 10.3 cfs (2010 baseline conditions) which will not be consumed until an updated 2025, a very generous increase in your last "estimate" of available capacity. And then using an exceptionally questionable estimate (see further comments) of the percent of the impact of flow reduction attributable to groundwater withdrawals, you calculate that an additional equivalent of 2.5% of say the frequent low flow recommended MFL of 572 mgd, or 14.3 mgd in groundwater could be withdrawn by 2025. And further you go on in the draft prevention strategy to assert that you can't, due to multiple withdrawal options, determine a sustainable groundwater yield (SGY) as a finite number, despite the fact that you have established finite determination of the allowable additional groundwater withdrawals.</p> <p>Unfortunately the overt actions, pressure imposed by the current administration on the water management districts and pressure and consequences brought to bare to accommodate politically influential individuals and special interests provides ample cause to question the history and procedures used to increase the allowable withdrawals from a symbolic, significant springshed which has suffered a long-term decline in flow and potentiometric surface. Models are easily formulated, applied and calibrated to achieve</p>

				<p>preordained objectives. Your modeling procedures and application to Silver Springs should be verified by an independent and identified expert.</p> <p>There is inadequate data and analysis presented-number of wells, permit limits long term flow data, analysis of non-permitted use-to adequately estimate and evaluate the long-term relationship between spring and run flow and water use. Using the very same model used to evaluate the MFL to back calculate the flow raises serious questions about the efficacy of the procedures used to calibrate and verify the model and draw conclusions about the relationship between flow and withdrawals. Understandably, Dr. Knight of the Springs Institute also disagrees and indicates that pumping accounts for approximately 19 rather than 3.5% of the historic 32% reduction in spring flow. This needs to be independently adjudicated.</p> <p>There are a number of statistical techniques and sensitivity analyses available to assess the relative contributions of independent variables to the behavior of a dependent variable. This should be done before coming to such significant conclusions about the relative effects of groundwater withdrawals. That you were unable to determine a SGY yet determine allowable additional withdrawals is at the heart of the deficiency of the proposed MFLs. Your MFLs merely attempt to establish an allowable tolerance for from some selected baseline period and do not address the sustainable capacity of the waterbody. Sustained means exactly that, the groundwater is not being mined and spring flow is not longer being reduced. Until a more complex, independent investigation of capable of quantifying SGY, take a simple course of action and do not consider awarding additional or increased CUP permits until the long term reductions in spring flow and potentiometric surface are reversed.</p>
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