February 14, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Comments on minimum flows for the Chassahowitzka River, Crystal River/Kings Bay, Homosassa River and Weekiwachee River systems submitted by Mitchell Newberger to State Senator Charlie Dean

This memorandum documents an e-mail concerning minimum flows for several Springs Coast river systems that was sent by Mr. Mitchell Newberger to State Senator Charlie Dean and forwarded to staff by Mr. Hugh Gramling.

Mr. Newberger's forwarded e-mail, which was submitted on February 9, 2011, is attached to this memorandum

# Attachment

#### February 9, 2011 E-Mail from Mr. Newberg to Senator Dean, Forwarded by Mr. Gramling

From:Hugh Gramling [mailto:hgramling@tbwg.org]Sent:Thursday, February 10, 2011 9:02 AMTo:Dave Moore; Bruce Wirth; Bill Bilenky; Mike HeylSubject:FW: SWFWMD Proposed Rule on MFL and 15% kill of the Chassahowitzka River System

Hugh Executive Director Tampa Bay Wholesale Growers, laa (813) 655-1914 www.tbwg.org

From:Mitchell A. Newberger [mailto:mnewberger@verizon.net]Sent:Wednesday, February 09, 2011 4:42 PMTo:Charlie DeanSubject:SWFWMD Proposed Rule on MFL and 15% kill of the Chassahowitzka River System

Senator Dean, I am in complete agreement with you on the need to establish MFL's on the spring origin coastal rivers Chass, Weeki, Homosassa and Crystal rivers and others throughout the state of similar origin. The problem arises for example when SWFWMD takes the flow records on Chassahowitzka from the historical drought years 1998-2001 and ignores approx. 80 other readings from 1930 forward. The vast majority of printed documents consistently show Chassahowitzka main as 1st magnitude 100cfm vent but has been set at 63cfm less 15% for withdrawal without "significant Harm".

The clear reason for this is that the lower SWFWMD can show the flow the more water they can withdraw when and if the river springshed receives more rain to recover back to its normal 100cfm or whatever the number was. Unfortunately no river can recover under those conditions but will only degrade due to salt water interface pressure and microbial damage that cannot be reversed As I understand it Swfwmd has already maxed out on Weekiwachee at 10% and the sinkholes continue to increase with 10% or more degradation inflicted on the river system. SWFWMD is degrading the rivers not maintaining restoring or recovering as required by Florida Law, Federal Law and the Florida Constitution.

The plan is to take 10% from Homosassa and an amount that I do not have available at this time from Crystal River. These Numbers are flawed by SWFWMD's on admission, so we don't really know how devastating these actions will be. It could be far higher than SWFWMD's formula which they admit is flawed.

What we do know is that the Coastal Swamps are dying and to take more water means escalation of salt water intrusion and more loss of our natural resources..The only answer to this is for SWFWMD to use their authority provided by the legislature and move to Desalinization. If we don't stop these rivers will be salt water. It may already be irreversible. The salt water has already intruded into the Hillsborough, Manatee area for over 2 ½ miles and I personally know of a well being abandoned due to salt water on Kings Bay near U.S. 19 and Fort Island Rd.

Although these rivers are not in your district I would hope that you will be concerned from the standpoint of your position as Chair of Natural Resources. This is a major threat to the state .We must get water for future development from another source and give the eco system and the

environmental system equal protection that is provided for but ignored under the law by SWFWMD. Sincerely,

# Mitchell A. Newberger

820 Newberger Road Lutz, Florida 33549 Phone: (813) 949-1078 Cell: (813) 310-4147 February 17, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Comments submitted by Mr. William Garvin regarding barnacle, fish and manatee occurrences in the Homosassa River system and minimum flow recommendations

This memorandum documents e-mail correspondence between Mr. William Garvin and Mr. Doug Leeper (with the Southwest Florida Water Management District) regarding barnacle, fish and manatee occurrences in the Homosassa River system, and development of minimum flows for the system.

DAL

Attachments: Attachment A – E-mail from William Garvin dated February 16, 2011, with two attached photographs
 Attachment B – Second e-mail from William Garvin dated February 16, 2011, with two attached photographs
 Attachment C - E-Mail to William Garvin from Doug Leeper, dated February 17, 2011

#### Attachment A

#### E-Mail from William Garvin Dated February 16, 2011, With Two Attached Photographs

From: Bill Garvin To: Doug Leeper; Cara S. Martin; Ron Basso; Sid Flannery Cc: Ron Miller Subject: Barnacles Date: Wednesday, February 16, 2011 7:11:22 PM Attachments: Z IMG\_3038.jpg Z IMG\_3036.jpg

#### Gentlemen,

I was on manatee watch and noticed an uprooted tree probably a palm, near the Bridge on Fish Bowl Drive. With the low water we have had all winter the root ball and trunk were above water. I had to do a double take because there were barnacles on the trunk of the tree. I know the tree has been there for a while as most of us are used to seeing the top of the root ball. The root ball was even questioned in early December by a Wildlife Park volunteer who thought it might be the back of a distressed manatee. I am a Manatee Watch volunteer so I am out there on Tuesday mornings each week from November 15th through March 31st. The fallen tree is about 100 to 120 Feet down river from the bridge on Fish Bowl Drive which makes it very close to where the SW Branch meets the Homosassa River.

GPS location of the tree is N 28° 47.868 W 82° 35.411

Attached images will show the barnacles. A wider angle to show relation of stump to bridge with stump circled and area of barnacles with arrow.

I believe with salt water that close to the joining of the SW Branch and the Homosassa River no further water withdrawals could be tolerated by the manatee as well as plant life for a healthy river environment. The manatees have been staying down river about 150 yards from where the spring flow from the Homosassa Springs Wildlife State Park joins the water from the SW Branch because of depth. The water in the Homosassa River has been very shallow last year and this year the manatee have to stay in the deeper water otherwise their backs would be out of water it has been that shallow.

William Garvin 4380 S. Blue Water Point Homosassa, FL 34448-3900 352-628-4685



#### Attachment B

#### Second E-Mail from William Garvin Dated February 16, 2011, With Two Attached Photographs

From: Bill Garvin To: Doug Leeper; Cara S. Martin; Ron Basso; Sid Flannery Cc: Ron Miller Subject: More Barnacles Date: Wednesday, February 16, 2011 7:18:24 PM Attachments: Z IMG\_3041.jpg Z IMG\_3042.jpg

Gentlemen,

I was on manatee watch and noticed the park manager's floating dock that the float has barnacles on it. When I say the park manager that is Art Yerian the manager of the Homosassa Springs Wildlife State Park who has a dock on park property and on the river. The Dock is only **950** Feet from the Main Spring in the Homosassa Springs Wildlife State Park, GPS location of the dock is N 28° 47.962

W 82° 35.475

Attached images will show the barnacles and wide angle to help show location.

I believe with salt water that close to the spring no further water withdrawals could be tolerated by the plant life for a healthy river environment. Already bass and brim stay in the South West Branch as there is fresher water there than in the main river. We have lived here for ten years and until three years ago we did not have a problem with barnacles. Two years ago we had to have our boat removed and have the bottom scrapped of barnacles and coated with an anti-fowling paint, up till that time we just got algae on the bottom of the boat.

William Garvin 4380 S. Blue Water Point Homosassa, FL 34448-3900 352-628-4685



# Attachment C

#### E-Mail to William Garvin from Doug Leeper, Dated February 17, 2011

From: Doug Leeper To: "Bill Garvin" Subject: RE: E-mails submitted on Feb 16, 2010 Date: Thursday, February 17, 2011 8:25:00 AM

Mr. Garvin:

Thanks for the two e-mails (with attached photographs) you sent yesterday regarding barnacle, fish and manatee occurrences in the Homosassa River system, and your recommendation that minimum flows which allow for no further reductions in flows should be established for the system. Your concerns and those of others who have provided input to the District continue to be reviewed and discussed by staff as we work on development of a revised report on proposed minimum flows for the Homosassa River system. As noted in our previous communications, all comment submitted to the District will be included in the revised minimum flows report.

Please feel free to contact me if you have additional questions or comments regarding minimum flows for the Homosassa River system or other water management issues.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org March 15, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail correspondence between Mr. Brad Rimbey and Dr. Marty Kelly regarding sea level rise modeling and minimum flows development

This memorandum documents correspondence between Mr. Brad Rimbey and Dr. Marty Kelly (with the District) regarding modeling of sea level rise effects on salinity in coastal river systems and use of this information for minimum flows and levels purposes. Copies of electronic mails associated with this issue are attached to this memorandum.

DAL

Attachments:

- A E-Mail from Brad Rimbey to Marty Kelly, Dated March 8, 2011
  - B E-Mail from Marty Kelly to Brad Rimbey, dated March 9, 2011
  - C E-Mail with Attached Map from Brad Rimbey to Marty Kelly, dated March 9, 2011
  - D E-Mail from Marty Kelly to Brad Rimbey, dated March 10, 2011

# Attachment A

#### E-Mail from Brad Rimbey to Marty Kelly, Dated March 8, 2011

From: Brad Rimbey [mailto:brimbey3@gmail.com]
Sent: Tuesday, March 08, 2011 10:23 AM
To: Marty Kelly
Subject: SWFWMD Modeling of Sea Level Rise Effects on Coastal River Salinity

Dear Dr. Kelly,

Yesterday I attended SWFWMD's Environmental Advisory Committee meeting in Tampa and heard your presentation on Modeling Used in Assessing MFL's. I found your comment that SWFWMD is currently assessing the effect of anticipated future sea level rise on the salinity of our coastal rivers particularly interesting. Given the District's policy of establishing MFL's based solely on human impact to the resource while ignoring the negative effects of past sea level rise, why is the District now concerned with anticipated future sea level rise?

I suggest the District should also model the effect of past sea level rise to see if the modeling accurately predicts the salinity increases which have already occurred in our rivers. Historic salinity levels should be attainable indirectly by observing where oysters and barnacles have been found in years past versus present. Also, observing where the hydric hammock was alive and healthy just 6 years ago versus where the hydric hammock is now dead should provide useful historic information for your modeling.

I look forward to hearing from you.

Brad W. Rimbey, P.E. for the Chassahowitzka River Restoration Committee

# **Attachment B**

#### E-Mail from Marty Kelly to Brad Rimbey, dated March 9, 2011

From: Marty Kelly
To: Brad Rimbey
Cc: Mike Heyl; Doug Leeper
Subject: RE: SWFWMD Modeling of Sea Level Rise Effects on Coastal River Salinity
Date: Wednesday, March 09, 2011 8:05:33 AM

Brad,

Thanks for your interest in the presentation and the sea level rise discussion. As I noted in the meeting, we are interested in the potential changes that might occur to some of our coastal rivers as sea level continues to rise. While there is a lot of uncertainty at the rate of increase as I showed in one of the slides, it should be possible with the existing hydrodynamics models we have on a number of our coastal rivers to at least get a sense of the salinity changes that might occur as sea levels increase. Since we are currently working on the Chassahowitzka, Homosassa, and lower Withlacoochee Rivers, we think it would be informative to investigate a few scenarios. Right now we have asked our consultants to give us an estimate of the costs for making some additional model runs. Tentatively, we're considering modeling 2", 6" and 12" increase scenarios. At the current rate of sea level rise (approximately 2 mm per year), we might expect to see a 0.8 inch increase in sea level over the next ten years. If the rate of increase stays relatively constant, the 2,6 and 12 inch scenarios would represent an approx. 25, 75 and 125 year projection. If the rate doubles then the projections would be more on the order 10 to 60 years.

We anticipate running the models as currently calibrated, with the existing flows as discussed in each river's MFL report for the Homosassa and Chassahowitzka, and for the period 1995-1999 on the lower Withlacoochee. Since these models are already in place, we essentially have a 0 inch increase in sea level for the modeled periods. Since you brought up the issue of historic sea level, it would probably be possible to run, for example, a negative 2 inch (-2 inch) scenario, and thus get a sense of salinity when sea level was 2 inches lower (approximately 25 years ago) assuming flows from the spring were similar to existing conditions.

I appreciate your interest, and would be happy to discuss with you further. My contact information including telephone number are listed below.

Thanks, Marty

Martin H. Kelly, Ph.D. Minimum Flows and Levels Program Director Resource Projects Department Phone: (352) 796-7211 Ext. 4235

Note: Original e-mail from Brad Rimbey deleted by Doug Leeper

# Attachment C

#### E-Mail with Attached Map from Brad Rimbey to Marty Kelly, dated March 9, 2011

From: Brad Rimbey
To: Marty Kelly
Cc: Doug Leeper; Mike Heyl
Subject: Re: SWFWMD Modeling of Sea Level Rise Effects on Coastal River Salinity
Date: Wednesday, March 09, 2011 11:39:44 AM
Attachments: Chas Salinity Map.pdf

Marty - Thanks for your prompt response. I appreciate the need for modeling sea level rise and its effect on the salinity of our rivers and I appreciate the District's willingness to do some predictive modeling on this important issue. What I was hoping to have answered is why the District is doing this study. Is it part of the MFL program or is it just for increasing the general knowledge of the anticipated effects of climate change?

As Mike Heyl can attest, I question whether the models for the Chassahowitzka are, in fact, currently calibrated. I was recently copied on an email from Mike Heyl to Michael Czerwinski regarding the movement of the 5 ppt isohale on the Chassahowitzka under the proposed MFL 11% reduction. The modeling predicted the 5 ppt isohale would only move upriver 0.2 km (660 feet) with an 11% freshwater flow reduction. Without "laying pencil to paper", this simply does not sound right.

As represented in the attached slide from Mike Heyl's public workshop(s), the location of the Chassahowitzka 5 ppt isohale is downriver (west) from the western-most cabins which are located just east of the Refuge's eastern boundary on the river. However, oysters are now thriving on the dock pilings of these cabins upriver. I am not a crustacean expert but a quick Internet search indicates the lower salinity tolerance for oysters is 5 ppt. Based on this biological observation, it appears the 5 ppt isohale is already more than 660 feet upriver from where it is shown on the attached slide.

I am currently out-of-state for several weeks. Perhaps we can discuss this more when I return. In the meantime, could you please email the answer to my question regarding why the District is doing the sea level rise modeling?

Thanks, Brad Rimbey



Note: E-mail string deleted by Doug Leeper

# Attachment D

#### E-Mail from Marty Kelly to Brad Rimbey, dated March 10, 2011

From: Marty Kelly To: Brad Rimbey Cc: Doug Leeper; Mike Heyl Subject: RE: SWFWMD Modeling of Sea Level Rise Effects on Coastal River Salinity Date: Thursday, March 10, 2011 8:58:28 AM

Brad,

In response to your question, I view the modeling as a logical extension of our MFL work. Since salinity in the MFL study areas is literally a function of the mixing of saline and freshwater, the relative increase and/or decrease of either will affect the end salinity. Although MFLs are derived based on changes in the current baseline condition due to withdrawals, if the future baseline changes then the impact of any future withdrawals will be a affected by the changed baseline. Since the tools are in place (i.e., the hydrodynamic models), it seems reasonable to investigate how sea level rise may influence baseline conditions. While it would increase the general knowledge of the anticipated effects of sea level rise in particular (acknowledging all the uncertainty that goes along with it), I think it is a relevant MFL question to anticipate. Please don't hesitate to call when you get back in town.

Marty

Note: E-mail string deleted by Doug Leeper

March 14, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Communications between staff regarding a request from Yuji Kato with a Japanese Public Broadcasting station for spring discharge information

This memorandum documents correspondence between District staff regarding a request from a Yuji Kato, with a Japanese Public Broadcasting station, for information on discharge from area springs.

DAL

Attachments:	Attachment A – E-Mail from Marty Kelly, dated February 25, 2011
	Attachment B – E-Mail from Doug Leeper, dated February 25, 2011
	Attachment C – E-Mail from Jason Hood, dated February 25, 2011
	Attachment D – E-Mail from Doug Leeper, dated February 25, 2011
	Attachment E – E-mail from Marty Kelly to Amy Harroun, dated February 25, 2011
	Attachment F – E-mail from Dave DeWitt to Amy Harroun, dated February 28, 2011
	Attachment G – E-mail – SWFWMD daily media report, dated March 1, 2011
	Attachment G – E-mail – SWFWMD daily media report, dated March 10, 2011

# Attachment A

#### E-Mail from Marty Kelly, Dated February 25, 2011

From: Marty Kelly
To: Mike Heyl; Doug Leeper; Jason Hood; Ron Basso
Cc: Chris Zajac; Robyn O. Felix; Roberta Starks; Michael Molligan; Veronica Craw; Amy K. Harroun
Subject: RE: Media Request for Spring Flow Data
Date: Friday, February 25, 2011 8:52:24 AM

Guys (Heyl, Leeper, Hood),

Please see request below. We should be able to provide relatively recent flow data for the Chass, Homosassa, and Rainbow. For uniformity, we should probably show flow period from 2000 (2002 for Homosassa – when flow record begins) to as current as you have readily available, with a trend line. Call me if you have any questions.

Thanks

Amy,

We attribute most of the observed flow declines to below normal rainfall for an extended period of time. Flow declines attributable to groundwater withdrawals are all in the neighborhood of 1 to 2 percent for Chass, Homosassa, and Rainbow. Weeki Wachee is an exception; the MFL report produced a couple of years ago attributed a 9% decline in flows to groundwater withdrawals; the remainder of the decline would be related to rainfall deficit. It is also worth noting that in the coastal springs, increasing sea level will tend to reduce spring flow, so some decline is due to this as well.

Marty

#### <><><><><><>

From: Veronica Craw Sent: Thursday, February 24, 2011 2:57 PM To: Amy K. Harroun Cc: Chris Zajac; Robyn O. Felix; Roberta Starks; Michael Molligan; Marty Kelly Subject: RE: Media Request for Spring Flow Data Amy, Spring flow data is probably most easily pulled from either Dave DeWitt or the MFL folks (Doug Leeper and Mike Heyl). But I could be wrong; it may take a while for all of us. His last question regarding flow decrease in the past few years should be fielded by MFLs. Thanks, Veronica \*\*\*\*\*\* Veronica Craw Environmental Section Manager Resource Projects Department

#### <><><><><><><>

From: Amy K. Harroun
Sent: Thursday, February 24, 2011 2:47 PM
To: Veronica Craw
Cc: Chris Zajac; Robyn O. Felix; Roberta Starks; Michael Molligan
Subject: Media Request for Spring Flow Data

Veronica,

A reporter with NHK-TV (Japanese public broadcasting) contacted the District today to request data on the flow to area springs over the last ten years. He also inquired about the total volume of spring water in the District and to what degree it has decreased in the past few years.

I talked to Chris Zajac today and he said that he can pull the data for the five first magnitude springs but that it may take a while.

The reporter's deadline is Tuesday, March 1.

Thank you, Amy

# Attachment B

#### E-Mail from Doug Leeper, Dated February 25, 2011

From: Doug Leeper To: Marty Kelly Cc: Mike Heyl; Jason Hood; Ron Basso Subject: RE: Media Request for Spring Flow Data Date: Friday, February 25, 2011 9:25:04 AM Attachments: image005.png image006.png

Marty:

The SE Fork record actually starts in Oct 2000. The Homosassa gage record starts in Oct 1995. Pulled the daily mean Q records from the USGS web site today and graphed approved (and estimated for Homo Springs site by USGS) values. Did not include provisional values. Added trend line with Excel.





Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: <u>doug.leeper@watermatters.org</u> Web Site: watermatters.org

Note: e-mail string deleted

# Attachment C

#### E-Mail from Jason Hood, Dated February 25, 2011

From: Jason Hood To: Doug Leeper Cc: Doug Leeper; Mike Heyl; Ron Basso Subject: RE: Media Request for Spring Flow Data Date: Friday, February 25, 2011 9:32:46 AM Attachments: Springs Media Request.xlsx image003.png image004.png image005.png

#### Marty,

Attached is the flow record from 1/1/2000 to 12/31/2010. Below is a plot of the data with a linear trendline.

Jason



Jason Hood Environmental Scientist Ecologic Evaluation Section Southwest FL Water Mgt. District (352) 796-7211 (EXT. 4192) (Office) (352) 279-0324 (Cell)

# Note: e-mail string deleted and attachments not provided here

# Attachment D

#### E-Mail from Doug Leeper, Dated February 25, 2011

From: Doug Leeper
To: Marty Kelly
Cc: Mike Heyl; Jason Hood
Subject: Modified Homosassa Springs Chart - 2000 start date
Date: Friday, February 25, 2011 9:39:18 AM
Attachments: image003.png

Marty – missed the 2000 start date... here's the plot for the Homosassa Springs data from 2000 to the present.



Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

Note: e-mail string deleted

# Attachment E

#### E-Mail from Marty Kelly to Amy Harroun, Dated February 25, 2011

From: Marty Kelly To: Amy K. Harroun Cc: Doug Leeper; Mike Heyl; Jason Hood; Ron Basso; Veronica Craw; Dave Dewitt Subject: FW: Media Request for Spring Flow Data Date: Friday, February 25, 2011 10:59:30 AM Attachments: Springs Media Request.xlsx image003.png image004.png image005.png

Amy,

Attached are plots of flow at Rainbow and Homosassa provided by Jason and Doug. Mike Heyl is on annual leave today, but should be able to respond on Monday. If we had plotted a longer record, the slopes of the regression lines would be different, but since the request was for recent declines, these plots should provide what was requested. Hurricane activity and attendant rainfall in part account for the upswing in flows around 2004 and 2005, and the period of record drought for most sites in District was in 2000-2001, so flows were at very low levels during this time as well. In terms of total flow from springs, I'm not certain if Dave Dewitt or Barcelo's group could help on this without someone having to retrieve a lot of spring flow data and summing it. It's a good question, but not one I've needed to set MFLs.

Marty

Note: e-mail string deleted and attachments not provided here

# Attachment F

#### E-Mail from Dave DeWitt to Amy Harroun, Dated February 28, 2011

From: Dave Dewitt
To: Amy K. Harroun
Cc: Doug Leeper; Marty Kelly; Roberta Starks
Subject: RE: Media Request for Spring Flow Data
Date: Monday, February 28, 2011 1:37:21 PM

Amy, a ballpark figure for estimated spring discharge from the Upper Floridan aquifer in the District is about 1,700 cfs (cubic feet/sec.), which is **over 1 billion gallons per day**. Not all of this spring flow is fresh water since many coastal springs that provide refuge for manatees are brackish water, but the temperature is very constant, between 23-24 degrees C. Warm Mineral Spring in Sarasota County is a couple of degrees warmer, about 26 deg-C on average.

David J. DeWitt, P.G. Water Quality Monitoring Program Resource Data and Restoration Department Southwest Florida Water Management District 2379 Broad Street, Brooksville, Florida 34604 352-796-7211, ext. 4512 fax. 352-540-6056

#### <><><><><><><><><>

From: Roberta Starks
Sent: Thursday, February 24, 2011 2:59 PM
To: Dave Dewitt
Cc: Veronica Craw
Subject: FW: Media Request for Spring Flow Data

Dave – please provide some input on this. Thanks..

Roberta Starks Water Quality Monitoring Program Manager Resource Data & Restoration Department Southwest Florida Water Management District 7601 U.S. Highway 301 Tampa, Florida 33637 813-985-7481, Ext. 2115 fax: 813-987-6585 roberta.starks@swfwmd.state.fl.us

Note: remainder of e-mail string deleted

# Attachment G

#### E-Mail – SWFWMD Daily Media Report, dated March 1, 2011

From: SWFWMD Daily Media Report To: All\_Users Subject: SWFWMD Daily Media Report Date: Tuesday, March 01, 2011 4:03:51 PM

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT DAILY MEDIA CONTACTS 3/01/2011 As of 4:00 p.m.

Reporter's Name: Tom Palmer Media Outlet: The Ledger Reason for Call: Property Tax Holiday

Agency's Response: Reporter contacted the District late Friday to speak with someone about the proposed two-year property tax holiday for the water management districts. Reporter wanted to know how this will affect the Peace River Basin Board's ability to fund projects and how the proposed tax holiday is affecting the budget planning process. Staff has left a message for the reporter and e-mailed the total budget of the Peace River Basin Board for the past six years.

Reporter's Name: Dave Kraut

Media Outlet: WFLA-TV Ch 8 Reason for Call: Hog Hunts/Florida-Friendly Fertilizing Campaign Agency's Response: Staff is continuing to work with the photographer/reporter to set up interviews on hog hunts and the Florida-Friendly Fertilizing campaign.

Reporter's Name: Dan Cassuto

Media Outlet: NBC 2 Ft. Myers

Reason for Call: Phosphates in Surface Water

**Agency's Response:** Reporter contacted staff yesterday to set up an on-camera interview for tomorrow on how phosphates in surface waters can be harmful to plants and animals. Reporter was referred to the Florida Department of Environmental Protection.

Reporter's Name: Lisa Davis

Media Outlet: Tampa Tribune

Reason for Call: Florida Water Star

**Agency's Response:** Staff contacted the East Pasco reporter about several Florida Water Star participation agreements that have been signed in East Pasco by St. Leo University and Habitat for Humanity of East & Central Pasco County.

**Reporter's Name:** Yuji Kato **Media Outlet:** NHK-TV (Japanese Public Broadcasting) **Reason for Call:** Spring Flow

**Agency's Response:** Reporter contacted the District last week to request data on the flow to area springs over the last 10 years. Reporter also inquired about the total volume of spring water in the District. Staff provided the reporter with historical **data from the District's first magnitude springs today. Staff explained that many** factors, including hurricanes and major droughts, have affected this data over the past 10 years. The estimated amount of spring discharge from the Upper Floridan aquifer in the District is about 1,700 cubic feet/second, which is more than 1 billion gallons of water per day.

# Attachment H

#### E-Mail – SWFWMD Daily Media Report, dated March 10, 2011

From: SWFWMD Daily Media Report To: All\_Users Subject: SWFWMD Daily Media Report Date: Thursday, March 10, 2011 4:12:15 PM

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT DAILY MEDIA CONTACTS 3/10/2011 As of 4:00 p.m.

Reporter's Name: Mark Larson Media Outlet: 970 WFLA-AM Reason for Call: Florida-Friendly Fertilizing

**Agency's Response:** Reporter conducted a telephone interview with a District staff member as an added-value opportunity through the District's Florida-Friendly Fertilizing public service advertising campaign. Interview is scheduled to run on the station's morning show tomorrow.

Reporter's Name: Sabrina Rocco

Media Outlet: St. Petersburg Times

Reason for Call: Community Education Grants

**Agency's Response:** Reporter contacted staff late yesterday in response to a District-issued news release on the District awarding five Pinellas County Community Education Grants. Staff discussed the Seminole Vocational Education Center grant, which will include the distribution of 600 water conservation kits and four educational workshops. The goal of the grant program is to encourage local residents and community groups to take ownership in their local water resources by conducting projects that will conserve water or protect water resources.

Reporter's Name: Unknown

Media Outlet: Sarasota Herald-Tribune

Reason for Call: EPA Numeric Nutrient Criteria

**Agency's Response:** Reporter covered today's Manasota League of Cities meeting where a District staff member spoke on the EPA numeric nutrient criteria.

Reporter's Name: Yuji Kato

Producer's Name: Mikio Kuroda

Media Outlet: NHK-TV (Japanese Public Broadcasting)

Reason for Call: Spring Flow

**Agency's Response:** Reporter contacted the District several weeks ago to request data on the flow to area springs over the last 10 years. Staff provided the reporter with historical data from the District's first magnitude springs and explained that

many factors, including hurricanes and major droughts, have affected this data over the past 10 years. Reporter and producer contacted staff again today with follow-up questions regarding the contributing factors of spring flow decline. Staff is researching.

# Reporter's Name: Cherlene

Media Outlet: Gulfport Patch

**Reason for Call:** Clam Bayou Stormwater Treatment and Habitat Restoration **Agency's Response:** Reporter contacted Surface Water Improvement and Management Program staff in response to two Clam Bayou stormwater treatment ponds that recently went online and responded well to the overnight heavy rainfall event. March 22, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Comments submitted by Mr. Karl Schulz regarding minimum flow recommendations for the Homosassa River system

This memorandum documents e-mail correspondence between Mr. Karl Schulz and Mr. Doug Leeper (with the Southwest Florida Water Management District) regarding development of minimum flows for the Homosassa River system.

DAL

Attachments: A – E-mail from Karl Schulz to Doug Leeper, dated March 17, 2011

B – E-mail from Doug Leeper to Karl Schulz, dated March 18, 2011

C – E-mail from Karl Schulz to Doug Leeper, dated March 18, 2011

# Attachment A <u>E-Mail from Karl Schulz to Doug Leeper, Dated March 17, 2011</u>

From: Karl Schulz To: Doug Leeper Subject: Zero change in minimum flow: Homosassa River Date: Thursday, March 17, 2011 12:31:30 PM

Dear SWFWMD:

# I am requesting that there be zero % (0%) reduction in the flow of the

#### Homosassa River.

I live on a connected canal and am seeing more mussels and salt water tolerant organisms than ever before.

Diluting the fresh water more will cause more environmental damage.

Please think Sound Conservation.

Thanks Karl Schulz , Homosassa, Fl 352) 621-1664

#### Attachment B <u>E-Mail from Doug Leeper to Karl Schulz, Dated March 18, 2011</u>

From: Doug Leeper
To: "Karl Schulz"
Bcc: Marty Kelly; Sid Flannery; Mike Heyl; Ron Basso; Mark Barcelo; Cara S. Martin; Karen Lloyd; Jay Yingling; Yassert Gonzalez
Subject: RE: Zero change in minimum flow: Homosassa River
Date: Friday, March 18, 2011 3:20:26 PM

Mr. Schulz:

Thank you for your recently submitted comments regarding development of minimum flows for the Homosassa River system. Staff has and will continue to consider your comments and plans to include them along with other submitted input and peer-review findings in a revised version of the District report on proposed minimum flows for the river system. The revised report will be made available for public review and will be presented to the District Governing Board to support the Board's consideration of rule amendments associated with the proposed minimum flows. Please feel free to contact me if you have additional comments concerning development of minimum flows for the Homosassa River system or other water management issues.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

# Attachment C <u>E-Mail from Karl Schulz to Doug Leeper, Dated March 18, 2011</u>

From: Karl Schulz To: Doug Leeper Subject: Re: Zero change in minimum flow: Homosassa River Date: Friday, March 18, 2011 7:30:20 PM

Thank you ...... Karl Schulz

#### March 15, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	MCG Field Notes (Vol. 1, Issue 2) with information on minimum flows and levels development in Citrus County, submitted to the District in March 2011 by Mike Czerwinksi

This memorandum documents a volume of MCG Field Notes with information on minimum flows and levels development in Citrus County that was submitted to the District in March 2011 by Mike Czerwinski. A copy of the electronic mail that included the document is attached to this memorandum.

# Attachment A

# E-Mail from Mike Czerwinski, dated March 7, 2011, Forwarded by Philip Rhinesmith

*Note: An Adobe PDF formatted version of the original e-mail that includes the imbedded newsletter follows this sheet – Doug Leeper* 

From:	Philip Rhinesmith
To:	Doug Leeper
Subject:	FW: News From Michael G. Czerwinski, P.A. Environmental Consultant
Date:	Tuesday, March 08, 2011 8:18:59 AM

#### FYI

From: Josie Guillen Sent: Tuesday, March 08, 2011 8:15 AM To: Veronica Craw; Philip Rhinesmith Subject: FW: News From Michael G. Czerwinski, P.A. Environmental Consultant

#### FYI

From: Michael G. Czerwinski, P.A. Environmental Consultant [mailto:dthompson@mgcenvironmental.com]
Sent: Monday, March 07, 2011 8:35 AM
To: Josie Guillen
Subject: News From Michael G. Czerwinski, P.A. Environmental Consultant

Having trouble viewing this email? Click here

Michael G. Czerwinski, P.A. Environmental Consultant

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# MGC FIELD NOTES

# March 2011

#### In This Issue

Minimum Flows and Levels (MFL's) are being established on Citrus County Waterways by the SWFWMD. What MFL's mean to you and 1?

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Crystal River High School Site Improvement Project

Water Conservation and Rain Barrels "THINK GREEN"

**Coming Next Month** 

What is a Phase I ESA?

Thought Of The Day

#### Dear Josie,

MGC FIELD NOTES is a continued effort to keep our readers informed on our more interesting activities and projects, and our commitment to protect the environment and balance the needs of the human population. The newsletter will not only keep you abreast of our interesting projects but also provide insightful information on daily living, environmental awareness, community events and information and what steps we can take individually to think and act in an environmentally responsible manner. Think GREEN.

March, 2011 - Vol 1, Issue 2

Minimum Flows and Levels (MFL's) are being established on Citrus County Waterways by the SWFWMD. What MFL's mean to you and I?

State water management districts or the Department of Environmental Protection are required by Florida Law to establish minimum flows and levels (MFLs) for aquifers, surface watercourses, and other surface water bodies to identify the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area. Rivers,

If just 25% of U.S. families used 10 fewer plastic bags a month, we would save over 2.5 BILLION bags a year. streams, estuaries and springs require minimum flows, while minimum levels are developed for lakes, wetlands and aquifers. This is used to ensure that ground water withdrawals do not cause significant harm to water resources or the environment. The MFL establishment process utilizes scientifically defensible minimum flows or levels that will afford protection to the water resources while still allowing reasonable and sustainable withdrawals to meet human needs.

In our area, the SWFWMD has collected and analyzed a significant amount of data, contracted independent scientific review, presented its findings to stakeholders and taken public comment in recent workshops to establish MFL's for the **Chassahowitzka** and **Homosassa Rivers**. Data collection is currently underway for the **Crystal River and Kings Bay** and the **Withlacoochee River**. We would encourage all residents to participate in any future meetings. Reviewing these scientific documents will help you to become more informed on the science of our waterways and we encourage everyone to review the documents and get involved in the process by attending the very informative public meetings conducted by the SWFWMD.

Last year the District established a MFL for the nearby Weeki Wachee River, which was approved by the Governing Board and established at 13%. That is the percent allowable reduction in the flows that can occur as a result of water withdrawals before or at which they have determined significant harm to the river system will occur. It is contingent on any new or existing expanding water user (applicant) to scientifically demonstrate that their new or expanded use will not cause the river to fall below this percentage. Copies of these reports can be found at the SWFWMD website at: http://www.swfwmd.state.fl.us/projects/mfl/

Finally, If actual flows or levels are, or during the next twenty years are expected to be below established minimum flows or levels, the implementation of a recovery or prevention strategy must be developed which might include an evaluation of alternative, and typically more expensive, water sources.

**MGC** was involved in MFL data collection and analysis for a portion of the Peace River in SW Florida in 2001 and our Senior Scientist, Mike Czerwinski, a Professional Geologist and Professional Wetland Scientist has been involved in studying the impact of wellfields on wetlands and implementing wellfield recovery strategies for Tampa Bay Water since 1986. **MGC** is currently monitoring wetlands and lakes surrounding the Sugarmill Woods wellfield in SW Citrus County and Rainbow Springs Utilities near Dunnellon, Florida in accordance with their Water Use Permits to insure that they are not being impacted by water withdrawals.

#### SPOT Technology Is Paving The Way For Work and Travel Safety

MGC field personnel are frequently providing environmental assessments, wellfield monitoring, or are involved in mapping thousands of acres in remote locations on land and on the water, sometimes many miles from roads and services and where cell phone service may not be available. In order to keep our personnel safe, and provide for notifications in cases of emergency such as a vehicle breakdown, hazardous encounter with wildlife or other emergency scenarios, MGC field personnel began utilizing SPOT GPS messengers.

SPOT is the world's first hand held, compact satellite messenger, using the GPS satellite system to determine your location and communications satellites to transmit that information to the chosen recipient. Activating the 9-1-1 help button on the SPOT notifies the GEOS International 9-1-1 Emergency Response Center to provide your exact location via Google Maps<sup>™</sup>, and to send for assistance in time of need

anywhere around the world[1]. The messenger also allows for a variety of user customized messages to be delivered according to user instructions via text message, email or emergency notification via the response center. Pressing the OK button, or activating the monitoring system will periodically send a (non emergency) user defined message or e mail back to the office (or designated e mail accounts) providing a location of the SPOT and field crew, with a web link to view their location using Google Maps<sup>™</sup>, allowing managers to monitor their location, progress and status. **MGC** has added this safety feature in addition to other safety training to insure its field personnel are never out of touch or in harms way.

[1]There is a monthly fee for these services and while most of the world is available for these services there a a few areas not covered. Please go to <u>https://www.findmespot.com/en/index.php</u> for a complete pricing list and map of all covered areas.

#### **Crystal River High School Site Improvement Project**

MGC Environmental Consultants recently conducted a Biological Survey and Habitat Assessment in preparation for the \$47 million site improvement project at Crystal River High School. The purpose of the assessment was to characterize native vegetation present on-site, and to identify the presence or likely presence of listed species. Listed species are those plants and animals that are formally listed as endangered, threatened, or species of special concern.

As part of this project <u>MGC</u> captured nine (9) Gopher Tortoises (*Gopherus Polyphemus*), a Florida Threatened species, that were within the proposed construction footprint and relocated them to a permitted gopher tortoise recipient site. However, more interestingly an Osprey (*Pandion hialiaetus*) decided to build a nest on a large athletic field light pole, after the biological survey was complete. The construction manager from ACA observed the Ospery setting up "light housekeeping" in the area just as construction was beginning and notified <u>MGC</u>. The light pole happened to be within the first phase of construction-the elevator shaft of the first building and had the potential to seriously delay or take hostage of this multi-million dollar construction project. <u>MGC</u> documented that there were no egg or young in the nest (not an easy task, since the nest was 75 feet off the ground) obtained the necessary permits and relocated the Osprey nesting material to a new artificial nesting platform placed on a nearby light pole in a matter of days.

#### Water Conservation and Rain Barrels "THINK GREEN"

#### Severe Water Shortage

Think the arid West has cornered the market on water shortages? Think again. Thirty-six states foresee water shortages by 2013, as Americans tap roughly 3.7 trillion gallons more water per year than is replenished. Worse yet, as much as 40 percent of a home's potable water goes to water your lawn. Think about it: The typical garden hose dispenses roughly 10 gallons of water per minute. Watering a flower bed for two minutes could fill some 320 drinking glasses!

In Central Florida, we have been experiencing less than average annual rainfall more frequently since 1970, principally as a result of less frequent tropical cyclone (hurricane) activity. This has resulted in more frequent "drought-like" conditions experienced in our region and just since 2001 a 30 inch cumulative rainfall deficit, even though 2004 and 2005 were above-average due principally to the impact of 5 named storms including Hurricanes Charlie, Francis and Dean. Remember in our region it is principally the rainfall, through percolation through the soil that "recharges" the Florida aquifer, our principal source of drinking water.

#### How Rain Barrels Help

Barrels help conserve potable water supplies. Treating and distributing safe drinking water is an energyintensive endeavor, and given many federal and state laws, most water that is piped into your home, whether it is used for cooking, or flushing the toilet, goes through treatment. Some four percent of our nation's power goes to water supply and treatment facilities. In California, where water must travel long distances, simply conveying potable water to end users saps some seven percent of all electricity consumed in the state. Rainwater collected in rain barrels on site means that you do not need to rely on chlorinated, treated municipal water to water your landscape plants.

Barrels halp to reduce the impact of runoff and flooding. Water rushing off rooftops finds it way to paved surfaces and storm drains as runoff, which picks up harmful pollutants like animal waste, trash, and chemicals along the way and carries them to streams and oceans. Experts cite runoff as the number one cause of water pollution in the U.S.

Keeping rainwater where it falls also and allows groundwater supplies a chance to replenish, meaning more water can be drawn from local-and often less energy-intensive-sources. **MGC** has had the opportunity to incorporate rain barrels into the design plans for some of its residential clients who are building in or near sensitive habitats, specifically wetlands, in order to not only conserve water but significantly reduce the potential adverse environmental impact associated with roof runoff.

[1]Proposed Minimum Flows and Levels for the Upper and Middle Withlacoochee River, July 1, 2010

Sincerely,

Dwayne Thompson Business and Marketing Manager Michael G. Czerwinski, P.A. Environmental Consultant

Forward email

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This email was sent to josie.guillen@swfwmd.state.fl.us by <u>dthompson@mgcenvironmental.com</u> | <u>Update Profile/Email Address</u> | Instant removal with <u>SafeUnsubscribe™ | Privacy Policy</u>. Michael G. Czerwinski, P.A. Environmental Consultant | 2716 South Lecanto Highway | Lecanto | FL | 34461

?
#### August 3, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Correspondence from Martyn Johnson to Doug Leeper, concerning flow measurement in the Homosassa River system

This memorandum documents e-mail from Mr. Martyn Johnson to Doug Leeper (with the Southwest Florida Water Management District) concerning measurement of flows in the Homosassa River by the United States Geological Survey. The e-mail is documented here based on relevance to the development of minimum flows for the Homosassa River system.

# Attachment

March 15, 2011 E-Mail from Martyn Johnson to Doug Leeper, with E-mail String

From:	Alan Martyn Johnson
To:	Doug Leeper
Cc:	<u>Kevin J Grimsley;</u> <u>rkane;</u> <u>Ron Basso</u>
Subject:	RE: SE Fork Homosassa River Flow Calculation Concerns
Date:	Tuesday, March 15, 2011 3:30:52 AM
Attachments:	image003.png

### Doug,

I did see your e-mail a few days ago, but did not have time to look at the graph in detail or formulate a reply due to the limited internet access I have.

I will also have to be brief now as I am still out of the US.

Frankly, the explanation is in my opinion shallow. Quick list of key points;

- 1. There appear to be 42 field measurements on the USGS web page since 2004 not 40.
- 2. No data is provided of how the results were calculated...field measurements were taken over various time intervals...how was dS/dt used (another approximation?)
- 3. Approximately 36% of the results have differences over 20%. From drawing a line on the graph it appears that 12% are at or above 20% negative and 24% are at or above plus 20%, with 7 of the 10 positive differences well above 20%....45% and 60% being noted.
- 4. There is no explanation of where the water goes (according to the equation scenario as presented in my e-mail).
- 5. There is no explanation about the notations such as good, poor and adjustment mentioned in my e-mail.

I have heard comments from various people that the equation is refined as more data/observations become available but it appears that there is little evidence that supports such open minded approach.

The continued efforts to defend questionable data are very concerning. I trust this will not have to be opened to a wider assessment when I return to the US.

Are the any thoughts about my comments on the Homosassa River Site or are tese still being formulated?

## Martyn

From: Doug.Leeper@swfwmd.state.fl.us

To: martynellijay@hotmail.com

CC: kjgrims@usgs.gov; rkane@usgs.gov; Ron.Basso@swfwmd.state.fl.us

Date: Tue, 1 Mar 2011 11:31:12 -0500

Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

#### Martyn:

Thanks for the e-mail you sent to me on February 19, 2011, concerning measurement and reporting of discharge at the SE Fork Homosassa Springs gage site. I spoke with staff from the United States Geological Survey about your e-mail and was provided with information which indicates that discharge estimates based on the regression equation approach correspond well

with discharge measurements made at the site. The figure below, provided by Kevin Grimsley, shows the relationship between 42 discharge measurements (Measured Q) made between 2004 and the present time, and corresponding discharge estimates based on the regression approach (Computed Q). Kevin informed me that the average difference between the computed and measured values is -2.4%; a difference that seems to be quite acceptable, given the complexities of flows in the SE Fork.



Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org

Web Site: watermatters.org

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Saturday, February 19, 2011 3:30 PM
To: Doug Leeper
Cc: Kevin J Grimsley; rkane; Ron Basso
Subject: SE Fork Homosassa River Flow Calculation Concerns

Doug,

Attached are two files that address the concerns I have mentioned before about the equation used to calculate the flow from the SEFork. In a recent e-mail I commented about your explanation, indicating that the average of the measurements and the actual daily mean discharge are one and the same thing. There is no separate measurement of the actual mean discharge. Quote

Individual discrete discharge estimates may exhibit moderate variation from actual physical conditions at the site, but the average of the composited discrete measurements made over a 24-hour period has been shown to correspond well with actual daily mean discharge.

End Quote.

In the Word file I have provided a detailed explanation of the numbers as I see them and detail that these are not moderate variations from actual. I see them as frankly inexplicable variations from actual and logical explanation. The Excel file has the supporting data/calculation/analysis from the base data copied from the USGS web site and the calculation equation as published.

I decided to leave my discussion in the word file as the included charts did not want to copy into an email and I hope it easier for you and others to review.

Please take the time to look over my comments, if I am wrong I will happily admit it providing there is valid explanation.

I know that the reaction may be that if I am right it will require a good explanation of why this was not recognized earlier and maybe why so much money has been spent on studies that appear to come to conclusions vastly different to what people are observing. My aim is to understand how the observations of good honest people do not match the 'scientific' data.

A lot more effort is needed to understand why the Homosassa River is deteriorating and not into finding ways to justify more water extraction from the aquifer. This is like Congress years ago ignoring the foolishness of the mortgage market that resulted in the crash, or the damage that has been even more dramatic in other rivers where recovery is now necessary. Transferring the problem is not the solution.

I have started to look at the water chemistry data you shared earlier and while comment soon.

Do not dismiss my analysis without a good reasoned argument, as you may have gathered I do not disappear easily.

Thanks for your continued attention to this matter of preventing further destruction of the Homosassa River. Simple solution is moratorium on drilling anymore wells or increasing extractions for 5 years for assessment to be validated.

#### Martyn

IMPORTANT NOTICE: All E-mail sent to or from this address are public record and archived. The Southwest Florida Water Management District does not allow use of District equipment and E-mail facilities for non-District business purposes. March 18, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Comments submitted by Ms. Mary Ann regarding minimum flow recommendations for the Homosassa and Chassahowitzka River systems

This memorandum documents e-mail correspondence between Ms. Mary Lynn and Mr. Doug Leeper (with the Southwest Florida Water Management District) regarding development of minimum flows for the Homosassa and Chassahowitzka River systems.

#### Attachment A

#### E-Mail from Mary Lynn to Doug Leeper, Dated March 18, 2011

From: mary ann lynn To: Doug Leeper Subject: mfl for homosassa river and chass river Date: Friday, March 18, 2011 3:01:08 PM

it is imperative that these and all of our rivers be protected as they already have lost a lot without any further withdrawal.

Please make it 0% withdrawal for each of these rivers. They are necessary for this area and we will lose greatly without them in a healthy position.

Mary Ann Lynn\Inverness, Fl.

#### Attachment B

#### E-Mail from Doug Leeper to Mary Lynn, Dated March 18, 2011

From: Doug Leeper
To: "mary ann lynn"
Bcc: Marty Kelly; Mike Heyl; Sid Flannery; Ron Basso; Mark Barcelo; Cara S. Martin; Karen Lloyd; Jay Yingling; Yassert Gonzalez
Subject: RE: mfl for homosassa river and chass river
Date: Friday, March 18, 2011 3:39:10 PM

Ms. Lynn:

Thank you for your recently submitted comments regarding development of minimum flows for the Homosassa and Chassahowitzka River systems. Staff has and will continue to consider your comments and plans to include them along with other submitted input and peer-review findings in revised versions of the District reports on proposed minimum flows for the two river systems. The revised reports will be made available for public review and will be presented to the District Governing Board to support the Board's consideration of rule amendments associated with proposed minimum flows for each system.

Please feel free to contact me if you have additional comments concerning development of minimum flows for the Homosassa or Chassahowitzka systems or other water management issues.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

#### May 16, 2012

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail concerning an article on proposed minimum flows for the Homosassa River that was published in <i>Voice of the River</i>

This memorandum documents correspondence between Doug Leeper, with the District, and Jim Bitter, and Priscilla Watkins, with the Save the Homosassa River Alliance, Inc., regarding and article on proposed minimum flows for the Homosassa River system that was published in the *Voice of the River*.

DAL Attachments

# Attachment A

Voice of the River, Volume 13, No. 1



Volume 13, No. 1

Spring, 2011

## http://www.HomosassaRiverAlliance.org HALL'S RIVER DEVELOPMENT – HERE WE GO AGAIN Joanne Bartell

At a recent meeting of the Citrus County Planning Development and Review Board, Vince Cautero, the county's director of Development Services, told planning board members, county staff, and an audience of citizens that homeowners in all corners of Citrus County should know there are no planning laws that prohibit incompatible commercial developments from being placed on any street, in any neighborhood, or next door to any homestead; that there is no certainty in how big or how intense a commercial development may expand to, even if located in a residential area; and this is the way planning has worked since the 1960's. He may not have used those exact words - but it does accurately reflect the end result of Mr. Cautero's self-styled interpretation of a "planned development overlay" (also called a "PDO"). The bottom line is there is no certainty to what type development could be placed next to your home. You could wake up tomorrow and discover an application is pending for a commercial enterprise to operate from a neighboring property - and county staff is recommending its approval because they say the developer filed an application for a PDO, and a PDO is a "technique" to deviate from the standards in our Comprehensive Plan, the document that is *supposed* to guide growth in our community. As Mr. Cautero bluntly stated at this meeting, "We're acutely aware of the fact that many people are opposed to that, but that doesn't make it improper. It actually puts it into a legal context."

# A BRIEF HISTORY – THE HALL'S RIVER RETREAT

If you did not follow Citrus County politics from 2000 through 2004, here is a brief history on a project that was proposed to be built on Halls River Road that was far more intense than the Comprehensive Plan allowed. County staff at that time mistakenly believed that a PDO gave them the power to recommend approval of major deviations from the Plan standards and staff led the majority of the Board of County Commissioners (BOCC) into believing this could be legally done. In this case, staff also believed it was lawful to have a zoning category that was not defined in the Plan. Despite tremendous public opposition the BOCC majority approved the project called "Halls River Retreat"; a 54 unit time share condominium project that included a manager's residence, marina, and other amenities - all proposed to be built on an 11-acre waterfront home site that was riddled with wetlands and zoned for 1 home.

Two groups challenged the appropriateness of the BOCC's approval; the Homosassa River Alliance and an ad hoc committee comprised of 6 directly affected property owners of which I was one. The legality of the deviations to the standards was challenged and the court was asked to rule on the requirement of the law that a development order must be consistent with the Plan. In a Circuit Court ruling, upheld by the 5th District Court of Appeals, the Judge ruled, "Where the proposed use is more intensive or of a different type from that designated, the use is inconsistent with the Plan." Shortly after the Appellate Court upheld the ruling, the majority of the BOCC and county staff made statements at a public meeting that the ruling only applied to this one piece of property. A prominent local attorney asserted that the ruling was further limited to the one application because it was not a "Chapter 163" decision. (163 refers to Florida Statute 163, the State's Growth Management law.) Seeking clarity on the effect of the Circuit Court's ruling (ie: to silence the nonsense that the effect of the ruling only applied to the one application and the one piece of property), the Circuit Court was asked to rule on a second case that was filed some months earlier; specifically, this was a "Chapter 163" case. The Judge ruled in our favor and in this decision it was clearly stated that the ruling was in accord with the Court's prior ruling that the application was illegal as a matter of law because it was inconsistent with the Citrus County Comprehensive Plan because it proposed a use more intense than that allowed by the Plan. In the transcripts of the court hearings the Judge makes it very clear to the County that the ruling is worded exactly as he intended and the effect should be as intended, that development orders must be consistent with the Plan.

#### HALL'S RIVER DEVELOPMENT – NEW NAME, SAME ISSUES

In spite of the clear language of the Court in the Halls River Retreat rulings, here now comes "Halls River Development" (HRD), slightly different name and a slightly different project, but the same issue; the proposed project is not consistent with the Citrus County Comprehensive Plan. The HRD project proposes a 3000 sq. ft. waterfront restaurant (open to the general public), a waterfront "resort" with a "manager's residence", 20 one-bedroom cabins, 10 two-bedroom cabins, a marina (boat rentals), and other amenities - all proposed to be built on an 11-acre waterfront home site that was riddled with wetlands and zoned for 1 home.

Just so you know, the application includes a PDO and County staff is recommending approval. Here we go again.....

Homosassa River Alliance Board of Directors			
Jim Bitter, President	Ron Miller, VP.	Bob Jeeves, Secretary	Tess Cornett, Treas.
Rolf Auermann	Emily Casey	Tom Clark	Al Grubman
Jake Jacobs	Winston Perry	Georgeanna Phelps	Rosie Rendueles
Iris Rose	Ron Schultz	Charlie Stonerock	Kathy Stonerock
Priscilla Watkins			2
Contacts: Jim Bitter	628-1563 or jbitter@t	ampabay.rr.com	

Newsletter: Iris Rose 628-7481 or IBROSEFLA@tampabay.rr.com

# WATCH FOR UPCOMING MEETING

The Hall's River Project (formerly The Hall's River Retreat) will be presented to the Planning Development and Review Board (PDRB) on April 7<sup>th</sup>. Please be sure to watch the Chronicle for any mention of this meeting. If you are opposed to the project, it is imperative that you attend this meeting and express these concerns. It is your right and privilege to do so. It is very important that the PDRB hears what you have to say. There are numerous violations of the Comprehensive Plan and County Staff has approved the new proposed project and this is a definite concern. This battle was fought a dozen years ago and here it is again but in a different form. Again, we must show a united front.

#### Message From the President - Jim Bitter

In my 55 years as an observer and admirer of the Homosassa River I cannot think of a more critical time than what is occurring at present. There are several projects currently on the fast track for permitting that are clearly in violation of the Comprehensive Plan and Land Development Code. Locally, the Southwest Florida Water Management District (SWFWMD), was about to release a study indicating that an additional draw-down of the river flow of 5% would cause no major damage until we intervened (see related article, p. 4). At the state level, what had been a pretty good Springs Protection Act has been reduced to tokenism and at the federal level, the recently submitted budget drastically reduces funds for enforcement of the Clean Water Act and the Clean Air Act. If this river is to have a voice, it is us.

## CITRUS COUNTY COUNCIL'S "BITTER ROAST"

You might not like a "bitter roast" when it comes to your coffee beans, but for the Citrus County Council, a "Bitter Roast" was an inspiration for all! Jim Bitter was the recipient of the Council's "Concerned Citizen Commendation" at its First Annual Awards Dinner in January. Jim is a long time delegate to the Council and an equally long time community advocate. The inspiration for this commendation is to make every elected official responsible and thoughtful in decisions that are made for this county.

Keynote speaker Representative Ron Schultz began the roast with many anecdotal zingers and fond memories. Notables in the audience of more than 200 attendees included Betty Strifler, Clerk of the Courts, former Commissioners Vicki Phillips and Joyce Valentino, various community leaders and many friends from throughout the county.

If those present didn't know what makes Jim Bitter who he is, they did by the end of the evening. Jim was roasted, praised and honored by a long march of speakers as a "tireless advocate of honest government – a man who walks the walk and talks the talk".

## ANNUAL MEETING

The Homosassa River Alliance Annual Meeting will be held on **April 14<sup>th</sup> at 5:00 p.m. at Bluebird Springs.** New board members and officers will be installed at this time. Bring a dish to share and plan on having a good time with fellow Alliance members.

- Please note that your mailing label indicates the last time you updated your membership/dues. Your support is very much needed and appreciated.
- Monthly meetings are held at 7 p.m. on the 2<sup>nd</sup> Thursday of each month at the Homosassa Civic Club on Yulee Drive. We need your support and input together, we can make a difference.

#### WE SAY NO!

### THE HOMOSASSA RIVER SYSTEM IS TOO SENSITIVE FOR ANY FURTHER REDUCTION BY SWFWMD OR REGIONAL WELLFIELDS By Priscilla Watkins

The huge, negative public response to Southwest Florida Water Management District's (SWFWMD) staff recommendations to set the flow level for the Homosassa River at 5% of its "estimated average" flow of 152 cubic feet per second (cfs) or 144.4 cfs has, so far, delayed the scheduled Board vote of approval.

Questions and criticisms of the findings, omissions and methodology have come from experts in water management and commercial fishermen, state regulators, public park managers, engineers, boaters, HRA's volunteer reviewers and some of our other members. Even some from SWFWMD's hand-selected peer review team. It was a huge response to a technical manual over a very short time span.

So far on the supporting side, there is the lone voice of the county director of Water Resources who appears to have only read the two-page executive summary and asked for clarification on the parameters and salinity terminology before sending in a letter of approval.

Concurrently, there has been an outpouring of opposition to the proposed flow rate being recommended for the Chassahowitzka River system, an 11% reduction. The Chassahowitzka is approximately five miles south of the Homosassa and it draws from the same aquifer whose water source is rainfall over the same 270-square-mile springshed.

Both the Homosassa and the Chassahowitzka are first-magnitude spring systems, two of four along a thirty-five mile span of our coastline, with only 27 first-magnitude springs in the entire state of Florida. Springs such as these are rare.

## WHAT WE OBJECT TO, IN BRIEF

We believe the historical river flow has already been reduced to a critical point; any further reduction would contradict all the efforts and funds spent to date to protect this coastal area. Lower flow will destroy many species and the delicate ecology of our river and its estuary.

One point we noted particularly was the higher salinity rates now in place as compared to twenty, thirty and fifty years ago. Larger draw-downs from our aquifer will increase that salinity yet the consequences were brushed aside. The only thing they admitted was the extreme sensitivity of creatures in the river system to the slightest change in flow - any draw-down will trigger "significant harm."

We pointed out that the river has suffered a severe drop in flow rate already but the report attributes that to rainfall patterns only. We feel that rapidly increasing population rates since 1960 have made a major impact yet SWFWMD, using models, determined there is only a slightly less than one percent impact to the Homosassa flow from pumping. For that 1% impact we must look at the time span chosen.

The time span chosen to average spring flow at 152 cfs ignored historic records on three of the vents going back to 1931 and *based its data on flow rates from 1995 through 2009 only*. The Florida Almanac 2002-2003 edition put the average flow at 192 cfs; its 2007-2008 edition lowered that to 175 cfs (drops of 20 and 16%). The United States Geological Survey folks, who measure the flow, also recognize a 20-25% drop has already occurred over the past decade. Furthermore, it is impossible to measure the river flow accurately; USGS says that those flow meter measurements are only accurate within ten to fifteen percent, at best. Whose word will we have to take that only 5% is used – that of residents looking at the river daily or SWFWMD staff in Brooksville?

One more point about flow rate measures: SWFWMD's calculation for the South Fork spring is based on a flow measurement of the aquifer level in Weeki Wachee, twenty-five miles away with the Chazzahowitzka system between them.

Another serious question that needs answering is this: what aquifer amount has SWFWMD based its water availability on? At one point in time we were thought to be water-rich but that was incorrect. As our vice-president, Ron Miller, reminded SWFWMD staff, their own man, John Parker, in 1998 said the earlier reports of 750 to 1,250 feet of potable water in Citrus and Marion counties was overestimated by a factor of three to six. For most of Citrus County the potable lens is generally 200 to 250 feet thick or less. If the allotments are based on that old faulty data we are in really serious trouble.

We also pressed for more serious consideration to the effect on the estuary and all of our protected areas, whether preserves or parks. This impact was barely mentioned.

# SETTING LEVELS – WHO CARES?

It is a big deal. Florida may have twenty-seven first magnitude springs (at least 100 cfs flow) but on the Gulf side of the state five of the big ones are concentrated right here: three in Citrus County and one each in northern Hernando County and in Dunnellon, Marion County. They are a major attraction for visitors, retirees and wildlife. If the balance is upset and the "harm" spirals out of control, we won't be able to do a quick fix, if we can do any fix at all. SWFWMD has already issued reports for three first-magnitude rivers in our immediate neighborhood - Weeki Wachee, Chassahowitzka, and the Homosassa. In process are reports on Crystal River, another first magnitude spring system, and three segments of the Withlacoochee River, which runs 86 miles and feeds the Tsala Apopka chain of lakes. Rainbow Springs in Dunnellon, a really massive first-magnitude system, feeds into the Withlacoochee. Incomplete documentation, minimalized impact, incorrect measures matter greatly as all the water management districts prepare for a greater allocation of our water resources. We have to pay attention to this.

# HOW DOES THIS AFFECT RESIDENTS AND BUSINESSES?

We require potable water to survive and most of our businesses require water in either their processes or at least in providing clean surroundings. While we have a law on the books that says each county must use its own water sources first, it doesn't say "use them wisely or conservatively." Penalties are almost non-existent, there are no water police.

It appears the goal of the flow plans is to tap the aquifer for all it is worth for state uses but not to benefit the residents and businesses now in Citrus County nor to the ecosystems that our rivers support. The Withlacoochee Regional Water Supply Authority has site plans in print for regional distribution well fields running down the county east of US19. We believe this water will go south to serve over-developed counties and perhaps destined to be bottled by a for-profit company with little or no monetary gain and much potential damage for our county.

Remember that for the past two decades we have been beating off attempts by one area or another trying to grab our water. Well, setting low flow levels will give the state

WMD data to show "there's plenty there" and we are only doing 15% harm! Drought is a regular occurrence in Florida, taking all that you can is poor long-term planning when our rivers are already stressed from a long stretch of droughts.

# WHAT IS HRA'S STAKE IN THIS?

Our focus is on The Homosassa River system (four rivers and at least 19 springs), which is under severe stress. We, the county, plus state and federal governments have been working together to identify contributors to the river stress and protect the 270 square mile springshed from further or new contaminants. To that end, certain areas around the Homosassa River system (and our other local first magnitude spring systems) have been identified, studied and placed under protection. We have St. Martin's Marsh Preserve, Chassahowitzka National Wildlife Refuge, Crystal River State Archeological Site, Homosassa Springs State Wildlife Park, and the entire Big Bend Preserve, which protects the estuarine systems from Apalachicola to the Levy/Citrus border. We have been working for years to control pollutants statewide. If a local, state or national legislative or agency proposal will harm the system or its springshed, we are going to be heard on the subject.

## ARE WE ALONE IN THIS CONCERN?

No. The Chassahowitzka report came out at the same time as ours - SWFWMD proposed an 11% reduction rate on that system. The Chassahowitzka River Restoration Committee, other organizations and individuals are united in vociferous opposition and have forced SWFWMD to delay its presentation to the Board for a vote as well.

Weeki Wachee, already severely degraded with a 16% decline in flow since 1961, had a further 10% reduction proposed in 2008. The report did not include anticipated fish kill rate at a 10% reduction, but said the river could still be home to the entire gulf population of manatees. That side of Hernando County is sparsely populated, and the spring is owned by SWFWMD; we missed hearing objections there.

#### WHAT IS NEXT?

We are asking each of you to call your County Commissioners and the Citrus County Director of Water Resources and urge them to access the Report at <u>www.watermatters.org</u> and all of the public comments that are available online. We hope you will tell them that, after reading the report, they need to let SWFWMD staff know it should be recommending zero percent (0%) reduction in flow on the Homosassa and a review of the Chassahowitzka report with a view towards addressing citizens' concerns. Commissioners, 352-341-6560: Winn Webb, Joe Meek, John Kenney, Dennis Damato, Rebecca Bays. Water Resources, 352-527-7646: Robert Knight.

We ask you to immediately email SWFWMD with your objection to the rate for Homosassa, telling them 0% should be the level. SWFWMD, Resource Projects Department, <u>doug.leeper@swfwmd.state.fl.us</u>

We will continue to talk with SWFWMD until our concerns are addressed or the vote is taken. If data is not included or corrected, we will have to move upward in the chain of command. The time is now for our governing bodies of the water distributors and of the county to educate themselves about flow issues and get involved. It will not be long before the state Legislators will be forced to take a public stand.

## WHAT IS THE BIG DEAL ABOUT HIGH SALINITY AT THE SPRINGS By Ron Miller

SWFWMD studies show the Homosassa River to be exceptionally sensitive to reductions of fresh water flowing from the springs. This acute sensitivity is due to the spring-dominated river system where the tides push the salt water from the Gulf against the freshwater of the Springs. Near the Springs the salinity ranges from .5 PPT to 5 PPT (parts per thousand) and is relatively constant. This low salinity zone is essential to the estuary web of life, providing required breeding grounds and sources of food for a large number of fish and other organisms. That is why you can observe so many different species of fish at the Blue Waters and at the Main Springs. Weaken the spring flow and this critical zone can be snuffed out making it impossible for many species to exist. These low salinity zones are increasingly limited and their preservation is a state and national priority. That is why hundreds of millions of dollars have been spent to protect our coastal spring estuaries. However, the local water authority plans to transfer water from well-fields in the Homosassa Springshed is working in the opposite direction.

# PROOF THAT SALINITY IS INCREASING AT THE SPRINGS By Bill Garvin

I was on manatee watch and noticed barnacles on the park manager's floating dock. The dock is only **950** Feet from the Main Spring in the Homosassa Springs Wildlife State Park. (The front page photo shows the barnacles). Bass and brim now stay in the South West Branch as there is fresher water there than in the main river. We have lived here for ten years and until three years ago we did not have a problem with barnacles. Two years ago we had to have our boat removed to have the bottom scraped of barnacles. I believe with salt water that close to the spring no further fresh water flow reduction could be tolerated for a healthy river environment.

## TWELVE YEARS OF ELEMENTARY SCHOOL RIVER TRIPS By Tom Stokes

For twelve consecutive years we have organized and sponsored a "Trip on the River" for third-grade students from Homosassa Elementary School. The students see how wildlife use the river and its surroundings for their homes. They also meet Brian Thompson, who makes his living by crabbing. They learn the importance of clean water for blue crabs to survive and how our waterways need to be kept as free of pollution as possible. The Alliance has funded the trip for the past several years. This year's river trip will take place on May 10, 11, and 12.

The First Three Sisters Spring Music Fest will take place on Saturday, **April 9, from 4-7 p.m.** on the grounds of the Three Sisters Springs in Crystal River. Music, gumbo, jambalaya and a silent auction will make this an afternoon to remember. Presented by the Friends of the Chassahowitzka National Wildlife Refuge. Food by Neon Leon's Zydeco Restaurant. It's an alcohol-free (no coolers please) event. Bring your lawn chairs.

\$25/ adults, \$10/children 3-12, and under 3/free. For info call 352-201-0149

# **Attachment B**

#### E-Mail from Bill Bilenky to Cara Martin, dated March 15, 2011

From: Bill Bilenky
Sent: Tuesday, March 15, 2011 9:30 AM
To: Cara S. Martin
Cc: Bruce Wirth; Michael Molligan; Richard Owen
Subject: RE: Homosassa River Alliance - Setting MFLs

I obtained a copy of the "Voice of the River" from the Homosassa River Alliance and while a member of the Alliance and a supporter I was concerned about the inaccuracies in the issue dealing with the setting of MFLs for the Homosassa and Chassahowitzka Rivers. But what really bothered me is the tenor and tone of the article. I think a response is necessary because people believe the poppycock that occasionally appears in the "newsletter."

An issue that should be addressed is the boogey man – conspiracy argument "it appears the goal of the flow plans is to tap the aquifer for all its is worth for state uses but not to benefit the residents and businesses now in Citrus County nor to the ecosystems that our rivers support." What bothers me about this is the idea that there is a "state use" while the residents of Sugarmill Woods, located right between both springs are over-pumping and supporting a per capita that is more than twice the per capita of residents of counties to the south. The there is the argument that "We believe this water will go south to serve over-developed counties and perhaps destined to be bottled by a for-profit company with little or no monetary gain and much potential damage for our county." There is absolutely no support or evidence of such a conspiracy.

This article is inaccurate and misleading. I think the District should draft a measured reply that should be sent to the Alliance.

Bill

From: Cara S. Martin
Sent: Tuesday, March 15, 2011 8:55 AM
To: Bill Bilenky
Subject: RE: Homosassa River Alliance
No problem-I also spoke to Marty and he is going to look over the article and discuss with Hammond.

<><><><><><>

From: Cara S. Martin

Sent: Monday, March 14, 2011 5:17 PM To: Bill Bilenky Subject: Re: Homosassa River Alliance I'll look when I am in the office tomorrow.

From: Bill Bilenky
Sent: Monday, March 14, 2011 05:10 PM
To: Cara S. Martin
Cc: David Rathke; Marty Kelly
Subject: Homosassa River Alliance

The Homosassa River Alliance has sent out a newsletter to its members criticizing the District on its MFLs for the Homosassa and Chassahowitzka Rivers. Please see if you can get a copy, if not, I will try to get one. I think that we should send an open letter response to them to correct what I believe may be incorrect statements. We have addressed many of the issues in the newsletter and I think it would be advantageous to address some of the claims.

Bill

# Attachment C

#### <u>E-Mail from Cara Martin to Staff, dated March 18, 2011</u> (Note: e-mail string deleted)

From: Cara S. Martin
To: Doug Leeper; Mark Hammond
Cc: Marty Kelly; Amy K. Harroun; Robyn O. Felix
Subject: RE: Update on Springs Coast MFLs Working Group
Date: Friday, March 18, 2011 4:07:59 PM

I spoke with Mr. Bitter today and he is very open to letting us write something for the newsletter. He shares our concerns of the large time span between newsletters as it is sent out quarterly. He did offer allowing the District to mail a response to the Homosassa River Alliance members (and not wait for the Fall 2011 newsletter) if the District will pick up the postage. He said he is willing to work with the District any way he can to reach out to the membership and continue a dialogue regarding the MFLs.

# **Attachment D**

#### E-Mail from Doug Leeper to Jim Bitter, dated May 10, 2011

From: Doug Leeper
To: "jbitter@tampabay.rr.com"
Bcc: Marty Kelly; Mike Heyl; Sid Flannery; Ron Basso; Cara S. Martin; Jay Yingling; Yassert Gonzalez; Bill Bilenky; Mark Hammond; Robyn O. Felix
Subject: Response to Recent Article in the Voice of the River
Date: Tuesday, May 10, 2011 3:39:04 PM

Dear Mr. Bitter:

I recently read the Spring 2011 edition of the Save the Homosassa River Alliance's *Voice of the River* and would like to offer some thoughts on a few issues and comments that were included in Ms. Priscilla Watkins' article on the development of minimum flows for the Homosassa River system.

First, there appears to be a misunderstanding concerning the format in which proposed minimum flows have been and will likely continue to be expressed for the river system. In her article titled "We Say No", Ms. Watkins writes that District staff recommends establishing a minimum flow for the river system at 144.4 cubic feet per second (cfs), a flow rate corresponding to a five percent decrease from the 152 cfs flow identified as the "estimated average" flow for the system. The District's currently proposed minimum flows for the Homosassa River system are actually not a static or single rate of flow, but instead are expressed as a percentage-of-flow reduction (or retention) for the full range of flows that would be expected for the system in the absence of water withdrawals. To aid in the understanding of the percentage-of-flow concept for minimum flows development, consider a proposed minimum flow that allows for up to a five percent reduction in flows in the Homosassa River system. Flows from the headwaters area of the system are currently measured at sites near the Homosassa Main Springs pool and in the Southeast Fork of the Homosassa River, and the combination of these flows provides a means for describing flows in the system. So, for periods of relatively high rainfall when combined flows at the two sites may be on the order of 200 cfs, the hypothetical minimum flows would be met if flows actually equaled or exceeded 95% of 200 cfs, or 190 cfs. Similarly, during drought periods, the combined flows could be expected to total 70 cfs in the absence of withdrawals, and flows of 66.5 cfs (95% of 70 cfs) would be sufficient for compliance with the hypothetical minimum flows. In practice, compliance with minimum flows would be determined based on evaluation of potential withdrawal-related flow reductions using a computer model of the regional aquifer system (the Northern District model). Withdrawals that would result in more than a five percent flow reduction (for a hypothetical minimum flows represented by an allowable five percentage-of-flow reduction) would be considered to cause violation of the minimum flows and would not be permitted.

The District has received substantial criticism regarding the draft report outlining proposed minimum flows for the Homosassa system. However, in addition to support that has been expressed by the Director of Water Resources for Citrus County, the panel of independent scientists that reviewed the District's draft report on proposed minimum flows for the system note that information presented in the report "...is adequate to conclude that the proposed maximum

5% reduction in Minimum Flow satisfies the language and intent of the Statute and will result in "no significant harm" to the flora and fauna of the Homosassa River System." In addition, the Florida Fish and Wildlife Conservation Commission in their review of the proposed minimum flows, note that the District "has done a commendable job of developing the conservative MFL [minimum flows and levels] for the Homosassa River system", although the Commission does recommend that the District consider some additional information prior to finalization of any minimum flows for the system.

A number of issues related to technical aspects of the minimum flows development process that were identified in Ms. Watkins' article also require additional discussion or consideration. The issues are: 1) a perceived lack of thoroughness regarding the District's efforts; 2) the characterization of existing withdrawal impacts; and 3) the measurement and use of discharge records for developing minimum flow recommendations.

With regard to perceived thoroughness of the District's technical analyses, Ms. Watkins suggests that consequences of salinity changes in the Homosassa River system that may result from water withdrawals have been "brushed aside" by District staff. To the contrary, evaluation of changes to salinity-based habitats that could occur as a result of water withdrawals is an integral component of the development of minimum flows for tidally influenced systems, and these types of analyses were specifically used to develop minimum flow recommendations for the Homosassa system. It was also suggested that the District has not seriously considered withdrawal impacts on the Homosassa River estuary and all protected areas in the vicinity of the river, noting that impacts to these systems "was barely mentioned", perhaps in reference to staff discussion of the subject at public workshops or in reference to summary information contained within the draft report on proposed minimum flows for the system. District staff endeavored to evaluate withdrawal related impacts to the entire Homosassa River system and believe that the approach that has been implemented will be protective of the greater ecosystem.

In her summarization of District findings regarding impacts of existing withdrawals, Ms. Watkins is correct in noting that current withdrawals in the northern portion of the District have resulted in about a one percent decrease in discharge from springs of the Homosassa system. This finding is not, however, based on flow records for the period from 1995 through 2009, as was suggested. The withdrawal impact is, rather, based on evaluation of the difference in the potentiometric surface (*i.e.*, the elevation to which groundwater would rise in a tightly sealed well) of the Upper Floridan Aquifer systemand spring discharge for model scenarios that include water withdrawals corresponding to regional water use in 2005 and a pre-development scenario that excludes all withdrawals. With regard to the modeling of withdrawal impacts in the Homosassa area and throughout the northern portion of the District, the pre-development scenario used for these evaluations was developed based on targeting pre-development potentiometric surface information published by the United States Geological Survey. The model used for evaluating impacts was calibrated (*i.e.*, simulated spring flows and aquifer water levels were closely matched to observed data) for steady-state 1995 calendar year conditions and transient conditions from 1996 through 2002.

In her discussion of area water use, Ms. Watkins asks "what aquifer amount has SWFWMD based its water availability on?" Water availability for the region is determined based on up-to-date

understanding of regional water sources, including both surface and ground waters, and comparison of model-predicted effects of withdrawals with constraints determined by minimum flows and other regulatory criteria established for area water bodies. In other words, the availability of water for reasonable and beneficial human use as well as natural system protection and persistence will be determined based on the best available current information and compliance with District regulations. With respect to the Homosassa River system, existing withdrawal impacts are estimated to reduce spring discharge about one percent, and impacts based on projected water demand for 2030 are predicted to result in a two to four percent reduction in flows. This information suggests that groundwater availability is not currently, and during the next 20 years is not expected to be limited by minimum flow constraints, assuming that the estimated flow reductions do not exceed allowable percentage-of-flow reductions associated with established minimum flows.

Ms. Watkins is correct in noting that discharge records for the period from 1995 through 2009 were used for analyses supporting development of minimum flow recommendations. This period represents the time-span for which we have relatively detailed and complete discharge records that are appropriate for developing daily mean values that may be used for modeling environmental responses to flow reductions. Historical records pre-dating this period are available for the Homosassa Springs and Southeast Fork gage sites in the river system, but the discontinuous and instantaneous nature of these data limits their usefulness for modeling purposes. For example, the records typically correspond with discrete measurement of discharge associated with an instantaneous tidal stage, and do not represent daily mean values. Because it is well documented that discharge from the Homosassa Main Springs and other springs of the system is affected by tides, instantaneous discharge measurements can vary considerably throughout any given day, depending on the tide stage at the time of measurement. This differences in how discharge records were derived, *i.e.*, as instantaneous or daily mean values, and the lack of continuity in the historical records led staff to use the discharge record from the 1995 through 2009 period for minimum flows and levels modeling purposes. Incidentally, inclusion of available historic discharge records with the more recent records does not substantially affect statistics (e.g., mean and median values) associated with the daily means discharge record. Also, variation that is evident in the composited historical and recent daily means record is consistent with rainfall patterns suggesting that temporal differences in reported discharge can be attributed primarily to rainfall variability. Finally, the issue of "historical" vs. "recent" discharge records for sites in the river system was discussed at the minimum flows and levels public workshop held in Lecanto this past January, and will be summarized in an updated version of the report on proposed minimum flows for the Homosassa River system.

With respect to development of minimum flows for the Homosassa River system, Ms. Watkins writes that "[i]t appears the goal of the flow plans is to tap the aquifer for all it is worth for state uses but not to benefit the residents and businesses now in Citrus County nor to the ecosystems that our rivers support." The District is, in fact, developing minimum flows for the Homosassa River system in response to statutory mandates that require establishment of minimum flows and levels for the prevention of significant harm to priority water bodies that may be associated with water withdrawals, and which also require identification of the system as a priority water body based on its classification as a first-magnitude spring system. Establishment of minimum flows for the Homosassa River system is expected to benefit residents and businesses of Citrus County and

the state of Florida, visitors to the region, and the non-human components of the greater ecosystem.

Ms. Watkins notes that the Weeki Wachee system has been "severely degraded with a 16% decline in flows since 1961" and "had a further 10% reduction proposed in 2008." The minimum flows established for the Weeki Wachee River system in 2008 require maintenance of 90% of the natural flows of the system. This minimum flow, like all established minimum flows or levels does not represent a proposed reduction in flows or levels, but rather identifies a threshold or criterion that is intended to serve as a limit to further withdrawals that could result in significant harm to the resource. Analyses supporting development of minimum flows for the Weeki Wachee River system indicate that water withdrawals have reduced natural flows in the system by nine percent.

In conclusion, please note that the District is committed to developing the best, scientifically defensible minimum flows for protection of the Homosassa River system. With regard to this position, the District has committed to hosting a series of public workshops for discussion of technical issues concerning minimum flows development for the Homosassa system and other spring-dominated tidal rivers of the Springs Coast. This forum will provide an appropriate avenue for addressing a number of observations and suggestions made by Alliance members and other interested stakeholders concerned with protecting our valuable coastal resources. As envisioned, the public workshops will focus on:

- existing data, minimum flow methodologies, and opportunities for alternative analyses supporting minimum flows development for Springs Coast systems;
- new studies and/or other data collection/analysis efforts that could be implemented to enhance minimum flows development or reevaluations; and
- development of monitoring/analytical strategies and time-lines for minimum flows compliance evaluations and environmental protection.

The major systems to be discussed during the workshops will include the Weeki Wachee, Chassahowitzka, Crystal and Homosassa rivers and associated springs and tributaries. The focus for the Weeki Wachee system will be on establishing the appropriate period and techniques for reevaluation of the minimum flows that have been established for the system. For the Chassahowitzka, Crystal and Homosassa systems, it is anticipated that the venue will provide the opportunity to identify the steps and processes necessary to move forward in establishing scientifically defensible minimum flows for these important coastal systems.

I look forward to continuing to work with you and other members of the Alliance on the development of minimum flows for the Homosassa River system. If you are of the opinion that the comments and thoughts I've outlined here may be of use to other Alliance members, I would urge you to consider including the body of this e-mail in a future edition of the *Voice of the River*.

## Sincerely,

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: <u>doug.leeper@watermatters.org</u> Web Site: watermatters.org

# Attachment E

Additional Correspondence

From:	Priscilla Watkins
To:	Doug Leeper
Cc:	<u>"Jim Bitter";</u> <u>"Ron Miller"</u>
Subject:	RE: Web posting of District response to newsletter article
Date:	Tuesday, May 31, 2011 11:03:08 AM

Great, thanks a lot. It will save me a lot of time as well. Priscilla

From: Doug Leeper [mailto:Doug.Leeper@swfwmd.state.fl.us]Sent: Tuesday, May 31, 2011 10:56 AMTo: Priscilla WatkinsSubject: Web posting of District response to newsletter article

Priscilla and Jim:

Thank you very much for your offer to post the content of my recent e-mail concerning the District's response to an article in the Spring 2011 edition of the <u>Voice of the River</u> on the Homosassa River Alliance web site. This effort will save the District some money, and is bound to support continued discussion of minimum flows development for the Homosassa River system.

I've attached an Adobe PDF formatted version of my May 10, 2011 e-mail, with hope that this will aid your posting of the document.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Priscilla Watkins [mailto:priswat@tampabay.rr.com]
Sent: Saturday, May 28, 2011 8:30 PM
To: Doug Leeper
Cc: 'Bob Jeeves'; 'Jim Bitter'
Subject: Your letter commenting on our Newsletter article on Minimum Flows

Dear Doug,

Thank you for your letter of May 11, 2011, regarding our team response to the Homosassa Minimum Flows report as printed in our Spring newsletter of *THE VOICE OF THE RIVER*. For the record, Mrs. Priscilla Watkins signed that response as a team member of the Minimum Flows committee, not as the Corresponding Secretary of HRA.

Relative to your request for the Alliance to print it in our next newsletter, that will not be issued until early winter, when the debate and your workshops will basically be over. To be fair to SWFWMD and release your response in a timely manner, that is, during this summer, members discussed an extra newsletter but we have no budget for that. The cost of a newsletter, dedicated, one-issue, including your response to our points and an explanation of the topic, mailed and/or delivered to our regular recipients, is in the neighborhood of \$724. If SWFWMD is interested in funding that project, we will provide the manpower, writing, editing, etc., and time to process it in a timely manner. As an alternative, in the manner of TooFar's reply to the same request, we could post it in a dedicated section on our website, absorbing the costs of preparation and posting. We though just handouts of your letter without our text would be confusing and we do not hold open meetings during the summer months of July and August. Let me know what you would like us to do.

For James C. Bitter, president, Homosassa River Allliance By Priscilla Watkins, corresponding secretary

IMPORTANT NOTICE: All E-mail sent to or from this address are public record and archived. The Southwest Florida Water Management District does not allow use of District equipment and E-mail facilities for non-District business purposes.

<u>n O. Felix</u>
<u>ay2011.pdf</u>

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Sent: Saturday, May 28, 2011 8:30 PM
To: Doug Leeper
Cc: 'Bob Jeeves'; 'Jim Bitter'
Subject: Your letter commenting on our Newsletter article on Minimum Flows

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For James C. Bitter, president, Homosassa River Allliance

By Priscilla Watkins, corresponding secretary

From:	Priscilla Watkins
To:	Doug Leeper
Cc:	"Bob Jeeves"; "Jim Bitter"
Subject:	Your letter commenting on our Newsletter article on Minimum Flows
Date:	Saturday, May 28, 2011 8:30:21 PM

#### Dear Doug,

Thank you for your letter of May 11, 2011, regarding our team response to the Homosassa Minimum Flows report as printed in our Spring newsletter of *THE VOICE OF THE RIVER*. For the record, Mrs. Priscilla Watkins signed that response as a team member of the Minimum Flows committee, not as the Corresponding Secretary of HRA.

Relative to your request for the Alliance to print it in our next newsletter, that will not be issued until early winter, when the debate and your workshops will basically be over. To be fair to SWFWMD and release your response in a timely manner, that is, during this summer, members discussed an extra newsletter but we have no budget for that. The cost of a newsletter, dedicated, one-issue, including your response to our points and an explanation of the topic, mailed and/or delivered to our regular recipients, is in the neighborhood of \$724. If SWFWMD is interested in funding that project, we will provide the manpower, writing, editing, etc., and time to process it in a timely manner. As an alternative, in the manner of TooFar's reply to the same request, we could post it in a dedicated section on our website, absorbing the costs of preparation and posting. We though just handouts of your letter without our text would be confusing and we do not hold open meetings during the summer months of July and August. Let me know what you would like us to do.

For James C. Bitter, president, Homosassa River Alliance By Priscilla Watkins, corresponding secretary May 25, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Presentation on the status of minimum flows and levels development to the Citrus County Board of County Commissioners

This memorandum documents information pertaining to a presentation on minimum flows and level made by Doug Leeper, Chief Environmental Scientist, to the Citrus County Board of County Commissioners at the April 26, 2011 meeting of the Board.

DAL

Attachments: A – Excerpted pages from the agenda for the April 26, 2011 Meeting of the Citrus County Board of County Commissioner

- B Slides used by Doug Leeper at the April 26, 2011 Meeting of the Citrus County Board of County Commissioners
- C Excerpted pages from a Citrus County Memorandum concerning Minutes for the April 26, 2011 Meeting of the Citrus County Board of County Commissioners

# Attachment A

Excerpted pages from the Agenda for the April 26, 2011 Meeting of the Citrus County Board of County Commissioners

# BOARD OF COUNTY COMMISSIONERS OF CITRUS COUNTY, FLORIDA Citrus County Courthouse, Room 100 110 N. Apopka Avenue, Inverness, FL 34450

## REVISED AGENDA April 26, 2011 at 1:00 P.M.

Dennis Damato, District 1, Chairman Winn Webb, District 5, 1<sup>st</sup> Vice Chairman Joe Meek, District 3, 2<sup>nd</sup> Vice Chairman John J. (J.J.) Kenney, District 2 Rebecca Bays, District 4 Betty Strifler, Clerk of the Circuit Court Richard Wm. Wesch, County Attorney Brad Thorpe, County Administrator Eber E. Brown, Deputy County Administrator

# **MISSION**

Citrus County Government will be a value-driven organization dedicated to responsive citizen service by providing quality programs, services and facilities to build a strong community and promote the best quality of life for our citizens.

All persons desiring to address the County Commission will be asked to limit their comments to the specific subject being discussed.

There will be a ti me limit set for all persons s peaking at the publi c hearings, zone changes, workshops, and "Open To The Publi c" portion of a meeting. Organizations will be limited to five (5) minutes and individuals to three (3) minutes on either side of the item being discussed.

All members of the public wishing to speak at the "Open To The P ublic" portion of a meeting will have three (3) minutes per person per day to make their request or presentation. If the request or presentation deals with a matter that requires investigation by County staff, the Chairman will refer it to the County Administrator to follow-up with the person making the request.

Any person w ho decides to appeal any decision of the Governi ng Body with respect to an y matter considered at this meeting will need a record of the proceedings and for such purpose may need to provide that a verb atim record of proceeding is made w hich record includes testimony and evidence upon which the appeal is to be based. (Section 286.0105 Fl orida Statutes)

Any person requiring reasonable ac commodation at this meeting because of a disability or physical impairment should contact the County Administrator's Office, C itrus County Courthouse, 110 N. Apopka Av enue, Inverness, FL 34450 (352) 341-6560, TTY (352) 341-6580 at least two days before the meeting.

# A. CALL TO ORDER – Apri I 26, 2011, C itrus Count y Courthouse, 110 North Apopka Avenue, Inverness, Florida

- A1. Invocation
- A2. Pledge of Allegiance
- A3. Roll Call
- A4. Recognition of Public Officials

# C. <u>PUBLIC HEARINGS - WORKSHOPS - PRESENTATIONS</u>

## C1. 1:25 P.M. PROCLAMATION - NATIONAL PUBLIC WORKS WEEK

a. Approve and authorize t he Board to execute a Proc lamation declaring May 15 through May 21, 2011 as "Public Works Week" in Citrus County, Florida.

## C2. 1:30 P.M. PROCLAMATION – RETURNING VETERAN – LAWERENCE OGLE

a. Approve and authorize the Board to execute a Procla mation declarin g May 7, 2011, as "Lawrence M. Ogle Day" in Citrus County, Florida.

## C3. 1:30 P.M. PROCLAMATION – BETTER SPEECH AND HEARING MONTH

a. Approve and authoriz e the Boar d to execute a Proclamation dec laring the month of May, 2011, as "Better Speech and Hearing Month" in Citrus County, Florida.

## C4. 1:40 P.M. PROCLAMATION - TOASTMASTERS AWARENESS DAY

a. Approve and authorize the Board to execute a Proclamation declaring April 29, 2011, as "Toastmasters Awareness Day" in Citrus County, Florida.

## C5. <u>1:45 P.M. PRESENTATION – SOUT HWEST FLO RIDA WATER MANAGEMENT</u> DISTRICT – MFL MINIMUM FLOW AND LEVELS

a. Presentation and ov erview by D oug Leeper, Chief Enviro nmentalist with Southwest Florida Water Management District (SWFWMD) regarding the minimum flows and levels in Citrus County, Florida.

# Attachment B

<u>Slides used by Doug Leeper at the April 26, 2011 Meeting of the</u> <u>Citrus County Board of County Commissioners</u>


#### Update on Minimum Flows and Levels in Citrus County

Douglas A. Leeper Chief Environmental Scientist Southwest Florida Water Management District

Citrus County Board of County Commissioners Meeting Inverness, Florida

April 26, 2011



#### Florida Statutes, Section 373.042 - Minimum Flows and Levels -

The **minimum flow** for a given watercourse shall be the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area.

The **minimum water level** shall be the level of groundwater in an aquifer and the level of surface water at which further withdrawals would be significantly harmful to the water resources of the area.





#### Southwest Florida Water Management District

#### Regulatory Use of Minimum Flows and Levels

- Water Resource
   Planning
- Water-Use
   Permitting
- Environmental Resource Permitting



# Priority List and Schedule developed and updated annually Methods, flows or levels developed and peer-reviewed Workshops held for public input Recovery or prevention strategies developed, as necessary

- Governing Board adopts minimum flows and levels
  into Chapter 40D-8, Florida Administrative Code
- Necessary recovery strategies included in Regional Water Supply Plan and in some cases adopted into Chapter 40D-80, Florida Administrative Code

# 

#### Southwest Florida Water Management District

#### Minimum Flows and Level Priority List and Schedule – Citrus Co. Water Bodies

#### Scheduled for Adoption

- Chassahowitzka River System and Springs
- (includes Chass. Main, Chass. #1, Crab Creek, Potter, Ruth and Blind Springs) • Homosassa River System and Springs
- Homosassa River System and Springs (includes Halls River Springs, Southeast Fork Homosassa River Springs, Homosassa Main Springs, Hidden River Springs)
- Upper and Middle Withlacoochee River System (Green Swamp)





#### outhwest Florida Water Management District

Minimum Flows and Level Priority List and Schedule – Citrus Co. Water Bodies

#### Scheduled for Adoption

- Crystal River System and Kings Bay Springs
- · Lower Withlacoochee River System





















		Southwest Florida Water Management District					
	Contact Information						
	Name:	Douglas A. Leeper					
	Title:	Chief Environmental Scientist					
50	Mail:	Southwest Florida Water Mgmt. District 2379 Broad St. Brooksville, FL 34604-6899					
1	Phone:	1-800-423-1476 or 352-796-7211 Extension 4272					
	E-Mail:	doug.leeper@swfwmd.state.fl.us					
	Web Sit	e: <u>www.swfwmd.state.fl.us</u> or <u>watermatters.org</u>					







# Attachment C

Excerpted pages from a Citrus County Memorandum concerning Minutes for the April 26, 2011 Meeting of the Citrus County Board of County Commissioners



Item No.:	BI
Date:	5/10/11
Approved for Agenda:	6.70

# AGENDA MEMORANDUM

THROUGH:	Betty Strifler, Clerk of the Circuit Court	
FROM:	Tifani White, Deputy Clerk	
SUBJECT:	Minutes of the Board of County Commissioners	
AGENDA DATE:	May 10, 2011	
BRIEF OVERVIEW:		

# **BUDGET IMPACT/FUNDING SOURCE:**

Account No.	Account Title	Current Budget	YTD Expenditure	Encumbran ces	Available Balance
			.S		• •
					\$0

# **RECOMMENDED ACTION:**

Approve the minutes of the Regular Meeting held on April 26, 2011.

Attachment: Minutes

# Reviewed & Approved by:

<b>County Attorney</b>	
Management &	
Budget	
Risk	
Management	
Other	

#### REGULAR MEETING OF THE BOARD OF COUNTY COMMISSIONERS OF CITRUS COUNTY, FLORIDA - 1:00 P.M.

#### A. <u>CALL TO ORDER - April 26, 2011, Citrus County Courthouse, 110</u> North Apopka Avenue, Inverness, Florida

The Chairman called the meeting to order at 1:00 p.m.

- A1. Invocation
- A2. Pledge of Allegiance
- A3. Roll Call

BOARD MEMBERS: First Vice Chairman Winn Webb, Second Vice Chairman Joe Meek, Commissioner Rebecca Bays, and Commissioner John J. (J.J.) Kenney. STAFF: County Attorney Richard Wm. Wesch, County Administrator Brad Thorpe, Deputy Clerk Tifani White, and Clerk of Courts Finance Director Sarah Koser.

A4. <u>Recognition of Public Officials</u>

Property Appraiser Geoffrey Greene was present.

#### B. **CONSENT AGENDA**

Motion by Second Vice Chairman Joe Meek, seconded by Commissioner John J. (J.J.) Kenney, to pull items B9 and B34 for discussion and approve the balance of the Consent Agenda items. Motion carried unanimously.

- B1. Approve the minutes of the Regular Meeting held on April 12, 2011.
- B2. Approve the county warrants for payroll and accounts payable.
- B3. LEFT BLANK INTENTIONALLY
- B4. Approve budget transfers for Board of County Commissioners/County Administrator, Board of County Commissioners, Solid Waste, HUD-Section 8, Low Income Home Energy Assistance, Fleet and Transportation Management, Code

# Commissioner John J. (J.J.) Kenney, to approve item C1. Motion carried unanimously.

Public Works Director Ken Frink thanked all Public Works staff members for their work.

- C2. <u>1:30 P.M. PROCLAMATION RETURNING VETERAN -</u> LAWERENCE OGLE
  - a. Approve and authorize the Board to execute a proclamation declaring May 7, 2011, as "Lawrence M. Ogle Day" in Citrus County, Florida.

Motion by Second Vice Chairman Joe Meek, seconded by Commissioner Rebecca Bays, to approve item C2. Motion carried unanimously.

- C3. <u>1:30 P.M. PROCLAMATION BETTER SPEECH AND HEARING</u> MONTH
  - a. Approve and authorize the Board to execute a proclamation declaring the month of May, 2011, as "Better Speech and Hearing Month" in Citrus County, Florida.

Motion by Commissioner John J. (J.J.) Kenney, seconded by Second Vice Chairman Joe Meek, to approve item C3. Motion carried unanimously.

Commissioner Webb noted the many children in the audience were present in support of Sergeant Major Ogle.

- C4. <u>1:40 P.M. PROCLAMATION TOASTMASTERS AWARENESS</u> DAY
  - a. Approve and authorize the Board to execute a proclamation declaring April 29, 2011, as "Toastmasters Awareness Day" in Citrus County, Florida.

Motion by Commissioner Rebecca Bays, seconded by Second Vice Chairman Joe Meek, to approve item C4. Motion carried unanimously.

C5. <u>1:45 P.M. PRESENTATION - SOUTHWEST FLORIDA WATER</u> MANAGEMENT DISTRICT - MFL MINIMUM FLOW AND LEVELS

Ł

a. Presentation and overview by Doug Leeper, Chief Environmentalist with Southwest Florida Water Management District (SWFWMD) regarding the minimum flows and levels in Citrus County, Florida.

Following the presentation Mr. Leeper responded to questions from the Board. Citizens Al Grubman, Marco Wilson, Ron Miller, Dan Hilliard, Jim Bitter, and Hope Corona commented on some of the points mentioned during the presentation.

- C6. <u>2:15 P.M. PUBLIC HEARING CR486 LAND EXCHANGE -</u> GLOBAL ASSOCIATES INTERNATIONAL GROUP, INC.
  - a. Conduct a Public Hearing for the adoption of a resolution of the Board of County Commissioners authorizing a Land Exchange between Citrus County and Global Associates International Group, Inc., in accordance with Section 125.37, Florida Statutes to acquire land necessary to the "CR 486 Phase II Road Improvement Project" and authorize Chairman to execute same.
  - b. Approve and authorize the Chairman to execute the Property Exchange Agreement.
  - c. Approve and authorize the Chairman to execute the Billboard Relocation Agreement.
  - d. Approve and authorize the Chairman to execute a deed to Global Associates International Group, Inc. for part of Lot 4 of an unrecorded subdivision 22000 in Section 24, Township 18S, Range 17E.
  - e. Authorize staff to close on the property and authorize the Clerk to place acceptance stamp on deed from Global Associates International Group, Inc. and record in the public records of Citrus County, Florida.

Cambell McLean and Kent Hipp, representatives of GrayRobinson gave a PowerPoint presentation.

Motion by Second Vice Chairman Joe Meek, seconded by Commissioner Rebecca Bays, to approve item C6 (Resolution No. 2011-072). Motion carried unanimously.

C7. <u>2:25 P.M. PRESENTATION - ECONOMIC DEVELOPMENT</u> COUNCIL (EDC) INVESTMENT REQUESTS

#### April 5, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Comments submitted by Chris Safos regarding minimum flow recommendations for the Homosassa and Chassahowitzka River systems

This memorandum documents e-mail correspondence between Chris Safos and Doug Leeper (with the Southwest Florida Water Management District) regarding development of minimum flows for the Homosassa and Chassahowitzka River systems.

DAL

Attachment: E-mail from Chris Safos to Doug Leeper, dated April 4, 2011 and E-mail from Doug Leeper to Chris Safos, dated April 4, 2011

#### Attachment

#### E-Mail from Chris Safos to Doug Leeper, Dated April 4, 2011

From: chris safos To: Doug Leeper Subject: WATER FLOW Date: Monday, April 04, 2011 2:30:40 PM

DEAR SIR, I AM CONCERNED WITH THE PROPOSAL TO DROP WATER FLOW IN THE HOMOSASSA AND THE CHASSAHOWITZKA RIVERS.AS A CITIZEN IN THIS AREA I HOPE IT WILL BE 0% REDUCTION. THANK YOU FOR YOUR CONSIDERATION. CHRIS SAFOS

#### <u>E-Mail from Doug Leeper to Chris Safos, Dated April 4, 2011</u> Note: Original e-mail string not printed here

From: Doug Leeper
To: "chris safos"
Bcc: Marty Kelly; Mike Heyl; Sid Flannery; Ron Basso; Mark Barcelo; Cara S. Martin; Karen Lloyd; Jay Yingling; Yassert Gonzalez
Subject: RE: WATER FLOW
Date: Monday, April 04, 2011 4:11:55 PM

Chris:

Thank you for your recently submitted comments regarding development of minimum flows for the Homosassa and Chassahowitzka River systems. Staff will consider your comments and plans to include them along with other submitted input and peer-review findings in revised versions of the District reports on proposed minimum flows for the two river systems. The revised reports will be made available for public review and will be presented to the District Governing Board to support the Board's consideration of rule amendments associated with proposed minimum flows for each system.

Please feel free to contact me if you have additional comments concerning development of minimum flows for the Homosassa or Chassahowitzka systems or other water management issues.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: <u>doug.leeper@watermatters.org</u> Web Site: watermatters.org

#### April 27, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail correspondence concerning comments from Mr. Martyn Johnson regarding discharge measurement in the Homosassa River system

This memorandum documents correspondence between Mr. Martyn Johnson, Mr. Doug Leeper (with the District) and others regarding concerns expressed by Mr. Johnson regarding measurement of discharge in the Homosassa River system. Copies of electronic mails associated with this issue are attached to this memorandum.

DAL

Attachments:

- A E-Mail (with string of additional e-mails) from Marty Johnson to Doug Leeper, Richard Kane, Ron Basso, and Kevin Grimsley, Dated April 14, 2011
- B E-Mail (with e-mail string deleted) from Richard Kane to Doug Leeper, Dated April 14, 2011
- C E-Mail (with portion of e-mail string deleted) from Ken Watson to Doug Leeper, Dated April 16, 2011

# **Attachment A**

#### <u>E-Mail (with string of additional e-mails) from Marty Johnson to Doug Leeper, Richard Kane, Ron</u> <u>Basso, and Kevin Grimsley, Dated April 14, 2011</u>

From:Alan Martyn JohnsonTo:Doug Leeper; rkane; Ron Basso; Kevin J GrimsleyCc:Dana Bryan; lee.edmiston@dep.state.fl.us; jdweaver@usgs.govSubject:Homosassa River 02310700 and SE Fork 02310688 Flow Calculation ConcernsDate:Thursday, April 14, 2011 9:06:35 AM

Gentlemen,

I am now back in the USA and disappointed that there is no response to my e-mail of March 15 and the related ones in February.

# AS POINTED OUT THE EXPLANATIONS OF THE DATA GENERATED BY THE USGS WHICH IS USED EXTENSIVELY IN THE DEVELOPMENT OF THE MINIMUM FLOWS FOR THE HOMOSASSA RIVER ARE QUESTIONABLE.

It is inconceivable that given the attempts I have made to get to the true evaluation of the flows in the Homosassa River that an 'ostrich mentality' appears to prevail. There have been a number of indications that USGS and SWFWMD are open to looking at and refining the methods and equations used to report the flows, but nothing happens other than shallow attempts to defend the status quo.

I could conclude that someone is scared to admit that hundreds of thousands of dollars have been spent trying to justify that further extraction of ground water from the aquifer will not damage this unique ecosystem only to find that some of the basic data used in the studies may be inaccurate.

Also, it is becoming increasingly clear that there is little or no interest in giving credence to the long term residents that there are serious changes occuring in recent years in the Homosassa River. These changes are real; barnacles reported further and further up the river are not fictitious they are clear evidence of increasing salinity.

The USGS flow measurements appear to be inaccurate; I specifically would reference what happens to the spring derived waters in the SE Fork if the USGS equation is correct. I have raised this point a number of times.

I have no doubt that the people that developed these equations did so with the best of intent, but as we look more critically at these there are grounds to rethink how accurate they are. Further, I have pointed out the 'eddy current' that draws higher salinity water to the sensors at SE Fork Site 02310688. There appears to be no attempt to look at this or correct the matter.

My attempts to address these matters by allowing those closest to the issue take credit for recognizing and correcting the errors appear to be falling on deaf ears, or reluctance to face

the realities. Therefore, I have little choice other than to start bringing this matter to the attention of people higher in the organization structures so they are informed before the Homosassa River is no longer suitable to be recognized as an Outstanding Florida Water (as it was by the Florida Legislature in1992) which is a water designated worthy of special protection because of its natural attributes.

## Martyn Johnson

From: martynellijay@hotmail.com

To: doug.leeper@swfwmd.state.fl.us

CC: kjgrims@usgs.gov; rkane@usgs.gov; ron.basso@swfwmd.state.fl.us

Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

Date: Tue, 15 Mar 2011 03:30:34 -0400

# Doug,

I did see your e-mail a few days ago, but did not have time to look at the graph in detail or formulate a reply due to the limited internet access I have.

I will also have to be brief now as I am still out of the US.

Frankly, the explanation is in my opinion shallow. Quick list of key points;

1. There appear to be 42 field measurements on the USGS web page since 2004 not 40.

2. No data is provided of how the results were calculated...field measurements were taken over various time intervals...how was dS/dt used (another approximation?)

3. Approximately 36% of the results have differences over 20%. From drawing a line on the graph it appears that 12% are at or above 20% negative and 24% are at or above plus 20%, with 7 of the 10 positive differences well above 20%....45% and 60% being noted.

4. There is no explanation of where the water goes (according to the equation scenario as presented in my e-mail).

5. There is no explanation about the notations such as good, poor and adjustment mentioned in my e-mail.

I have heard comments from various people that the equation is refined as more data/observations become available but it appears that there is little evidence that supports such open minded approach.

The continued efforts to defend questionable data are very concerning. I trust this will not have to be opened to a wider assessment when I return to the US.

Are the any thoughts about my comments on the Homosassa River Site or are tese still being formulated?

# Martyn

From: Doug.Leeper@swfwmd.state.fl.us To: martynellijay@hotmail.com CC: kjgrims@usgs.gov; rkane@usgs.gov; Ron.Basso@swfwmd.state.fl.us Date: Tue, 1 Mar 2011 11:31:12 -0500 Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

#### Martyn:

Thanks for the e-mail you sent to me on February 19, 2011, concerning measurement and reporting of discharge at the SE Fork Homosassa Springs gage site. I spoke with staff from the United States Geological Survey about your e-mail and was provided with information which indicates that discharge estimates based on the regression equation approach correspond well with discharge measurements made at the site. The figure below, provided by Kevin Grimsley, shows the relationship between 42 discharge measurements (Measured Q) made between 2004 and the present time, and corresponding discharge estimates based on the regression approach (Computed Q). Kevin informed me that the average difference between the computed and measured values is -2.4%; a difference that seems to be quite acceptable, given the complexities of flows in the SE Fork.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Saturday, February 19, 2011 3:30 PM
To: Doug Leeper
Cc: Kevin J Grimsley; rkane; Ron Basso
Subject: SE Fork Homosassa River Flow Calculation Concerns

#### Doug,

Attached are two files that address the concerns I have mentioned before about the equation used to calculate the flow from the SEFork. In a recent e-mail I commented about your explanation, indicating that the average of the measurements and the actual daily mean discharge are one and the same thing. There is no separate measurement of the actual mean discharge. Quote

Individual discrete discharge estimates may exhibit moderate variation from actual physical conditions at the site, but the average of the composited discrete measurements made over a 24-hour period has been shown to correspond well with actual daily mean discharge.

#### End Quote.

In the Word file I have provided a detailed explanation of the numbers as I see them and detail that these are not moderate variations from actual. I see them as frankly inexplicable variations from actual and logical explanation. The Excel file has the supporting data/calculation/analysis from the base data copied from the USGS web site and the calculation equation as published.

I decided to leave my discussion in the word file as the included charts did not want to copy into an email and I hope it easier for you and others to review.

Please take the time to look over my comments, if I am wrong I will happily admit it providing there is valid explanation.

I know that the reaction may be that if I am right it will require a good explanation of why this was not recognized earlier and maybe why so much money has been spent on studies that appear to come to

conclusions vastly different to what people are observing. My aim is to understand how the observations of good honest people do not match the 'scientific' data.

A lot more effort is needed to understand why the Homosassa River is deteriorating and not into finding ways to justify more water extraction from the aquifer. This is like Congress years ago ignoring the foolishness of the mortgage market that resulted in the crash, or the damage that has been even more dramatic in other rivers where recovery is now necessary. Transferring the problem is not the solution. I have started to look at the water chemistry data you shared earlier and while comment soon. Do not dismiss my analysis without a good reasoned argument, as you may have gathered I do not disappear easily.

Thanks for your continued attention to this matter of preventing further destruction of the Homosassa River. Simple solution is moratorium on drilling anymore wells or increasing extractions for 5 years for assessment to be validated.

#### Martyn

IMPORTANT NOTICE: All E-mail sent to or from this address are public record and archived. The Southwest Florida Water Management District does not allow use of District equipment and E-mail facilities for non-District business purposes.

# **Attachment B**

#### E-Mail (with e-mail string deleted) from Richard Kane to Doug Leeper, Dated April 14, 2011

From: Richard L Kane
To: Doug Leeper
Cc: Ron Basso; RichardLKane/WRD/USGS/DOI; KevinJGrimsley/WRD/USGS/DOI
Subject: Re: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns
Date: Thursday, April 14, 2011 10:13:38 AM

Doug, I am not sure what to say other than I have complete confidence in the accuracy of the USGS measurements. It sounds as if Mr. Johnson is concluding that since we are not computing the discharge that he thinks we should, that the measurement must be inaccurate. All of these sites and methods have been reviewed by the Office of Surface Water and we can certainly ask them to take another closer look and make recommendations. We welcome any external review that would help to improve the data collection effort.

I did recommend to Marty that we add an Index-velocity gage at SE fork and we can run it concurrently with the GW Regression methods and see what differences we get. We are also considering changing the velocity sensor at Homosassa River at Homosassa (02310700) from an up looker to a side looker. This has nothing to do with Mr. Johnson's comments but a determination from our own internal review of the data which we do annually. We think a side looker may help us to tighten up the rating but we wouldn't expect to see much difference in the daily values. If all of these changes are made we will also need to make a complete set of tidal measurements at both sites during different seasons of the year so new ratings would take us at least another year to develop.

Richard L. Kane Associate Center Director for Data U. S. Geological Survey Florida Water Science Center 10500 University Center Dr., Suite 215 Tampa, Fl. 33612 rkane@usgs.gov (813-498-5057) FAX (813-498-5001) Cell 813-918-1275

# Attachment C

#### E-Mail (with portion of e-mail string deleted) from Ken Watson to Doug Leeper, Dated April 16, 2011

From: Ken Watson
To: Doug Leeper
Cc: "Ken Watson"; dmades@hsweng.com
Subject: FW: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns
Date: Saturday, April 16, 2011 10:19:33 AM

Some thoughts from Dean, our resident USGS procedures expert.

Ken W. Watson, Ph.D., President 3820 Northdale Blvd., #210B | Tampa, FL 33624 Direct: 813.549.0223 | Phone: 813.968.7722 ext. 223 Fax: 813.962.2406 | email: @hsweng.com HSW Engineering, Inc. | www.hsweng.com Green Today... Better Tomorrow. Please consider the environment before printing this email.

From: Dean Mades [mailto:dmades@hsweng.com]
Sent: Friday, April 15, 2011 2:50 PM
To: 'Ken Watson'
Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

Some thoughts.....

1. In regards to Mr. Johnson, he should consider making an appointment to meet with the USGS (as I did) and letting them explain their stream-gaging procedures. There are volumes of manuals and data that could be produced to demonstrate the QA practices that Richard Kane alludes to for determining streamflow.

2. A concurrent flow-monitoring approach using an index-velocity gage and the current regression method might provide meaningful data for evaluating the accuracy of the flow record reported for SE Fork.

I do not know how accurate the past several years of average daily flow record has been rated by the USGS, but the daily record reported for water year 2005 is "poor", which the USGS defines as not meeting the next-level rating of "fair" which is within 15 percent of the true value.

The accuracy of the daily record derived using both methods is proportional to the accuracy of the field discharge measurements, which have historically been qualitatively rated by the field personnel and range between good (within 5% of actual discharge) and poor (>8% of actual discharge).

For an analysis of this nature, it would be essential to use an appropriate field protocol to

ensure the field measurements are rated "good" to the extent possible.

3. Regarding the Homosassa gage, it would be prudent to continue operating the uplooking AVM for 6 months or so concurrently with a side-looking AVM if one is installed. This concurrent AVM record will be useful for characterizing the consistency and variability in the index velocity measured by the two different meters, and the associated flow record derived using the index velocity record.

Dean M. Mades, P.E. 4411 Bee Ridge Road, #305 | Sarasota, FL 34233 Direct: 941.894.4018 Fax: 941.378.3074 | email: dmades@hsweng.com HSW Engineering, Inc. | www.hsweng.com Green Today... Better Tomorrow. Please consider the environment before printing this email.

From: Ken Watson [mailto:kwatson@hsweng.com]
Sent: Thursday, April 14, 2011 11:24 AM
To: dmades@hsweng.com
Subject: FW: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

Feel free to comment.

## Ken W. Watson, Ph.D., President

3820 Northdale Blvd., #210B | Tampa, FL 33624 **Direct: 813.549.0223** | Phone: 813.968.7722 ext. 223 Fax: 813.962.2406 | email: @hsweng.com **HSW Engineering, Inc.** | www.hsweng.com *Green Today... Better Tomorrow. Please consider the environment before printing this email.* 

From: Doug Leeper [mailto:Doug.Leeper@swfwmd.state.fl.us]
Sent: Thursday, April 14, 2011 11:18 AM
To: kwatson@hsweng.com
Subject: FW: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

FYI

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Richard L Kane [mailto:rkane@usgs.gov] Sent: Thursday, April 14, 2011 10:14 AM To: Doug Leeper Cc: Ron Basso; RichardLKane/WRD/USGS/DOI; KevinJGrimsley/WRD/USGS/DOI Subject: Re: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

Doug, I am not sure what to say other than I have complete confidence in the accuracy of the USGS measurements. It sounds as if Mr. Johnson is concluding that since we are not computing the discharge that he thinks we should, that the measurement must be inaccurate. All of these sites and methods have been reviewed by the Office of Surface Water and we can certainly ask them to take another closer look and make recommendations. We welcome any external review that would help to improve the data collection effort.

I did recommend to Marty that we add an Index-velocity gage at SE fork and we can run it concurrently with the GW Regression methods and see what differences we get. We are also considering changing the velocity sensor at Homosassa River at Homosassa (02310700) from an up looker to a side looker. This has nothing to do with Mr. Johnson's comments but a determination from our own internal review of the data which we do annually. We think a side looker may help us to tighten up the rating but we wouldn't expect to see much difference in the daily values. If all of these changes are made we will also need to make a complete set of tidal measurements at both sites during different seasons of the year so new ratings would take us at least another year to develop.

Richard L. Kane Associate Center Director for Data U. S. Geological Survey Florida Water Science Center 10500 University Center Dr., Suite 215 Tampa, Fl. 33612 rkane@usgs.gov (813-498-5057) FAX (813-498-5001) Cell 813-918-1275

NOTE: deleted orginal e-mail and string from M. Johnson that was sent to D. Leeper on April 14, 2011 (see attachment A to this memorandum).

#### May 6, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail correspondence concerning comments from Mr. Martyn Johnson regarding discharge measurement in the Homosassa River system

This memorandum documents correspondence between Mr. Martyn Johnson, Mr. Doug Leeper (with the District) and others regarding concerns expressed by Mr. Johnson regarding measurement of discharge in the Homosassa River system. Copies of electronic mails associated with this issue are attached to this memorandum.

DAL

Attachments: A - E-Mail (with string of additional e-mails) from Martyn Johnson to Doug Leeper , Dated May 2, 2011

B - Photographs (3) attached to E-Mail) from Martyn Johnson to Doug Leeper , Dated May 2, 2011

C - E-Mail from Doug Leeper to Richard Kane, Dated May 4, 2011

D - E-Mail from Richard Kane to Doug Leeper, Dated May 4, 2011

E - E-Mail (with e-mail string deleted) from Doug Leeper to Martyn Johnson, Dated May 6, 2011

#### E-Mail (with string of additional e-mails) from Martyn Johnson to Doug Leeper, Dated May 2, 2011

From: Alan Martyn Johnson To: Doug Leeper Cc: Ron Basso; rkane; Kevin J Grimsley Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns Date: Monday, May 02, 2011 3:36:04 PM Attachments: Site 02310688 1.JPG Site 02310688 2.JPG Site 02310688 3.JPG

Doug,

Thanks for keeping me informed of the plans for the working group.

I remain extremely concerned about the measurement of flows particularly from the SE Fork. I think we agree that the flow from the various springs in this section of the river provides the bulk of the lower salinity water which is critical to the conditions in the Homosassa River.

I am following up to get information about a suitable Acoustic Doppler Current Profiler that could be installed permanently to measure the flow at the SE Fork gage site. I have no doubt that the USGS and SWFWMD have much more ability to suggest a suitable unit, but the reluctance to deviate from the line that the "*data that are available are the best available information and have been developed using accepted and reviewed methods*" makes me more determined to be better informed about suitable equipment and general costs before requesting that such equipment be considered for installation.

You will no doubt recall at the last workshop you did consider the possibility of setting a minimum flow for the SE Fork alone, good idea and worthy of further investigation. As I recall there is comment about flow from the SE Fork declining over the study period in the peer review draft report. The reported data only considers the 'estimated/calculated' flows. Commentary from local residents tends to indicate that the reductions are much greater than reported. The frailties of both these assessments of this critical flow makes it paramount that we assure hard facts replace estimates calculated from questionable equations and the difficulty of quantifying commentary. I look forward to any discussion and or consideration to installation of a ADCP at this location.

As I kayak this section of the river I notice the changes in the vents, of particularly note recently is a vent area/depression center-left stream about three-quarters of the way upstream from the bridge. Two of the smaller vents have become more active with limestone (presumably) particles clearly evident in the flow. These particles appear similar to those deposited just upstream of the gage site, see photos attached (no weed growth). Also in the photographs you can see the stack of rip-rap concrete bags that further contribute to the eddy current I have mentioned before. The occasional higher salinity readings at this gage site I strongly believe are the result of these eddy currents drawing a thin layer of higher

salinity water along the concrete embankment downstream of the gage site. I am sure that if I had dye available to inject into the flow at the concrete embankment there are a few occasions where I could have visually confirmed this happening. Observation of the small clumps of weed being drawn along the concrete wall can frequently be seen at times the stage level is increasing. This false data unfortunately is used in Section 2 of the July 2010 report and brings some of the regression analysis into question.

Doug,

I appreciate your continued efforts regarding the Homosassa River. I heard on the telecast of your presentation to the Board of Commissioners that input from interested parties is keeping you busy. We have genuine concerns and appreciate your time dealing with these concerns but trust some of your time is spent relaying our concerns to SWFWMD's Board.

Thanks, Martyn

From: Doug.Leeper@swfwmd.state.fl.us

To: martynellijay@hotmail.com

CC: Ron.Basso@swfwmd.state.fl.us; rkane@usgs.gov; kjgrims@usgs.gov

Date: Wed, 27 Apr 2011 09:12:19 -0400

I'm writing to let you know that in response to your recent e-mails, I have been in contact with staff from the USGS and others regarding development of discharge records for sites in the Homosassa River system. It appears that the data that are available are the best available information and have been developed using accepted and reviewed methods. I'm sure that all who are interested in collecting and using the discharge data support the review and possible enhancement of approaches that could be used to improve the accuracy of the data. Of relevance to your concerns about the measurement of discharge in the Homosassa River system, I am pleased to inform you that the District plans to convene a working group for discussion of issues related to minimum flows development for the Homosassa and other coastal spring-dominated river systems. I believe that discussion of the measurement of discharge in the Homosassa River system and other local coastal systems, including the Chassahowitzka, Weeki Wachee and Crystal River system would be an appropriate topic for the working group to explore. Although we are only in the early stages of developing the working group, I envision that the stakeholders group will include representatives from governmental organizations and local stakeholders groups, such as the Save the Homosassa River Alliance. I expect that the working group may meet on an approximate monthly basis for six months or so for discussion of: existing data and minimum flow methodologies and projects; studies or other data collection/analysis efforts that could be implemented to enhance the District's development of minimum flows for the Chassahowitzka, Crystal, and Homosassa River systems; reevaluation of adopted minimum flows for the Weeki Wachee River system; and evaluation of compliance with minimum flows that are ultimately established for each of these river systems. I will certainly keep you apprised of developments related to the planned work-group process.

I look forward to continuing to work with you on the development of minimum flows for the

Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns Martyn:

Homosassa River system. Sincerely, Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Thursday, April 14, 2011 9:07 AM
To: Doug Leeper; rkane; Ron Basso; Kevin J Grimsley
Cc: Dana Bryan; lee.edmiston@dep.state.fl.us; jdweaver@usgs.gov
Subject: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

Gentlemen,

I am now back in the USA and disappointed that there is no response to my e-mail of March 15 and the related ones in February.

AS POINTED OUT THE EXPLANATIONS OF THE DATA GENERATED BY THE USGS WHICH IS USED EXTENSIVELY IN THE DEVELOPMENT OF THE MINIMUM FLOWS FOR THE HOMOSASSA RIVER ARE QUESTIONABLE.

It is inconceivable that given the attempts I have made to get to the true evaluation of the flows in the Homosassa River that an 'ostrich mentality' appears to prevail. There have been a number of indications that USGS and SWFWMD are open to looking at and refining the methods and equations used to report the flows, but nothing happens other than shallow attempts to defend the status quo. I could conclude that someone is scared to admit that hundreds of thousands of dollars have been spent trying to justify that further extraction of ground water from the aquifer will not damage this unique ecosystem only to find that some of the basic data used in the studies may be inaccurate. Also, it is becoming increasingly clear that there is little or no interest in giving credence to the long term residents that there are serious changes occuring in recent years in the Homosassa River. These changes are real; barnacles reported further and further up the river are not fictitious they are clear evidence of increasing salinity.

The USGS flow measurements appear to be inaccurate; I specifically would reference what happens to the spring derived waters in the SE Fork if the USGS equation is correct. I have raised this point a number of times.

I have no doubt that the people that developed these equations did so with the best of intent, but as we look more critically at these there are grounds to rethink how accurate they are. Further, I have pointed out the 'eddy current' that draws higher salinity water to the sensors at SE Fork Site 02310688. There appears to be no attempt to look at this or correct the matter.

My attempts to address these matters by allowing those closest to the issue take credit for recognizing and correcting the errors appear to be falling on deaf ears, or reluctance to face the

realities. Therefore, I have little choice other than to start bringing this matter to the attention of people higher in the organization structures so they are informed before the Homosassa River is no longer suitable to be recognized as an Outstanding Florida Water (as it was by the Florida Legislature in1992) which is a water designated worthy of special protection because of its natural attributes.

Martyn Johnson

From: martynellijay@hotmail.com To: doug.leeper@swfwmd.state.fl.us CC: kjgrims@usgs.gov; rkane@usgs.gov; ron.basso@swfwmd.state.fl.us

Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

Date: Tue, 15 Mar 2011 03:30:34 -0400

Doug,

I did see your e-mail a few days ago, but did not have time to look at the graph in detail or formulate a reply due to the limited internet access I have.

I will also have to be brief now as I am still out of the US.

Frankly, the explanation is in my opinion shallow. Quick list of key points;

1. There appear to be 42 field measurements on the USGS web page since 2004 not 40.

2. No data is provided of how the results were calculated...field measurements were taken over various time intervals...how was dS/dt used (another approximation?)

3. Approximately 36% of the results have differences over 20%. From drawing a line on the graph it appears that 12% are at or above 20% negative and 24% are at or above plus 20%, with 7 of the 10 positive differences well above 20%....45% and 60% being noted.

4. There is no explanation of where the water goes (according to the equation scenario as presented in my e-mail).

5. There is no explanation about the notations such as good, poor and adjustment mentioned in my e-mail.

I have heard comments from various people that the equation is refined as more data/observations become available but it appears that there is little evidence that supports such open minded approach. The continued efforts to defend questionable data are very concerning. I trust this will not have to be opened to a wider assessment when I return to the US.

Are the any thoughts about my comments on the Homosassa River Site or are tese still being formulated?

Martyn

**~~~~~~~~~~~~~~~~** 

From: Doug.Leeper@swfwmd.state.fl.us

To: martynellijay@hotmail.com

CC: kjgrims@usgs.gov; rkane@usgs.gov; Ron.Basso@swfwmd.state.fl.us

Date: Tue, 1 Mar 2011 11:31:12 -0500

Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

#### Martyn:

Thanks for the e-mail you sent to me on February 19, 2011, concerning measurement and reporting of discharge at the SE Fork Homosassa Springs gage site. I spoke with staff from the United States Geological Survey about your e-mail and was provided with information which indicates that discharge estimates based on the regression equation approach correspond well with discharge measurements made at the site. The figure below, provided by Kevin Grimsley, shows the relationship between 42 discharge measurements (Measured Q) made between 2004 and the present time, and corresponding discharge estimates based on the regression approach (Computed Q). Kevin informed me that the average difference between the computed and measured values is -2.4%; a difference that seems to be quite acceptable, given the complexities of flows in the SE Fork.

#### Error! Filename not specified.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org

#### Web Site: watermatters.org

**~~~~~~~~~~~~~~~~~** 

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com] Sent: Saturday, February 19, 2011 3:30 PM To: Doug Leeper

**Cc:** Kevin J Grimsley; rkane; Ron Basso

**Subject:** SE Fork Homosassa River Flow Calculation Concerns

Doug,

Attached are two files that address the concerns I have mentioned before about the equation used to calculate the flow from the SEFork. In a recent e-mail I commented about your explanation, indicating that the average of the measurements and the actual daily mean discharge are one and the same thing. There is no separate measurement of the actual mean discharge.

Quote

Individual discrete discharge estimates may exhibit moderate variation from actual physical conditions at the site, but the average of the composited discrete measurements made over a 24-hour period has been shown to correspond well with actual daily mean discharge.

End Quote.

In the Word file I have provided a detailed explanation of the numbers as I see them and detail that these are not moderate variations from actual. I see them as frankly inexplicable variations from actual and logical explanation. The Excel file has the supporting data/calculation/analysis from the base data copied from the USGS web site and the calculation equation as published.

I decided to leave my discussion in the word file as the included charts did not want to copy into an email and I hope it easier for you and others to review.

Please take the time to look over my comments, if I am wrong I will happily admit it providing there is valid explanation.

I know that the reaction may be that if I am right it will require a good explanation of why this was not recognized earlier and maybe why so much money has been spent on studies that appear to come to conclusions vastly different to what people are observing. My aim is to understand how the observations of good honest people do not match the 'scientific' data.

A lot more effort is needed to understand why the Homosassa River is deteriorating and not into finding ways to justify more water extraction from the aquifer. This is like Congress years ago ignoring the foolishness of the mortgage market that resulted in the crash, or the damage that has been even more dramatic in other rivers where recovery is now necessary. Transferring the problem is not the solution. I have started to look at the water chemistry data you shared earlier and while comment soon. Do not dismiss my analysis without a good reasoned argument, as you may have gathered I do not disappear easily.

Thanks for your continued attention to this matter of preventing further destruction of the Homosassa River. Simple solution is moratorium on drilling anymore wells or increasing extractions for 5 years for assessment to be validated.

Martyn

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IMPORTANT NOTICE: All E-mail sent to or from this address are public record and archived. The Southwest Florida Water Management District does not allow use of District equipment and E-mail facilities for non-District business purposes.

# Attachment B

Photographs (3) attached to E-Mail from Martyn Johnson to Doug Leeper, Dated May 2, 2011



# Attachment C

#### E-Mail from Doug Leeper to Richard Kane, Dated May 4, 2011

From: Doug Leeper To: Richard Kane (rkane@usgs.gov); Kevin Grimsely (kjgrims@usgs.gov); Ron Basso; Marty Kelly Subject: Developing a Response to M. Johnsons" May 2 E-Mail Date: Wednesday, May 04, 2011 9:29:12 AM Attachments: image002.png

Guys:

FYI - I plan to respond to Mr. Johnson's most recent (May 2) e-mail with comments that indicate we have discussed installation of acoustic Doppler instrumentation at the SE Fork site, and have also discussed measurement of Q at a Halls River site. I'm hoping that a discussion of Q measurement during one of the planned Springs Coast MFLs technical issues meetings will address many of Mr. Johnson's concerns and lead to fewer e-mail exchanges... Per a conversation between me, Richard and Kevin this past January, here are some rough cost estimates that I will use for my response e-mail.

Current costs for non-doppler site: ~\$16K annually, ~\$6-7K annually for WQ Doppler-site costs: ~\$30K annually, ~\$6-7K annually for WQ, ~\$15K initial set-up

Will also consider the budget requests that were submitted for FY2012 in support of District funding of USGS gage work. Here's an excerpt from a draft version of the budget spreadsheet which I will have to discuss with Marty Kelly (to check whether these numbers are accurate and whether they made it into his "final" funding request for the project) that includes some costs for the SE Fork and Halls River sites.

STATION NAME		2012			Comment	Comment 2
	SW	GW	QW	Total		
SOUTHEAST FORK HOMOSASSA	13300	0	7400	20700	Continuing	Discharge split (16600) funded
SPRING (bollom K and T)					1000	in data section
Installation	12000			12000		Add Index-velocity sensor
Halls River near Homosassa (Stage, IV,	29900		7400	37300	New	10 <sup>-0</sup> 0
bollom K and T)						
Installation	24000			24000		
	STATION NAME SOUTHEAST FORK HOMOSASSA SPRING (bolkom K and T) Installation Halls River near Homosassa (Slage, IV, bolkom K and T) Installation	STATION NAME       SW         SOUTHEAST FORK HOMOSASSA       13300         SPRING (bolkom K and T)       12000         Installation       12000         Halls River near Homosassa (Stage, IV, 29900       29900         bolkom K and T)       1         Installation       24000	STATION NAME     2012       SW     GW       SOUTHEAST FORK HOMOSASSA     13300       SPRING (bolliom K and T)     0       Installation     12000       Halls River near Homosassa (Stage, IV, 29900     29900       bolliom K and T)     0	STATION NAME     2012       SW     GW     QW       SOUTHEAST FORK HOMOSASSA     13300     0     7400       SPRING (bolkom K and T)     12000     1       Installation     12000     7400       Halls River near Homosassa (Slage, IV, 29900     7400       Jostallation     24000     1	STATION NAME         2012 SW         2012           SOUTHEAST FORK HOMOSASSA         13300         0         7400         20700           SPRING (bolkom K and T)         12000         12000         12000           Installation         12000         7400         37300           bolkom K and T)         29900         7400         37300           bolkom K and T)         24000         24000         24000	STATION NAME     2012     Comment       SW     GW     QW     Total       SOUTHEAST FORK HOMOSASSA     13300     0     7400     20700     Continuing       SPRING (boliom K and T)     12000     12000     12000     12000       Installation     12000     7400     37300     New       boliom K and T)     24000     24000     24000

Will copy you on my response to Mr. Johnson.
Douglas A. Leeper, Chief Environmental Scientist
Resource Projects Department, Southwest Florida Water Management District
2379 Broad Street, Brooksville, FL 34604-6899
Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272
Fax: 352-754-6885
E-Mail: doug.leeper@watermatters.org
Web Site: watermatters.org

#### **Attachment D**

#### E-Mail from Richard Kane to Doug Leeper, Dated May 4, 2011

From: Richard L Kane To: Doug Leeper Cc: Kevin Grimsely (kjgrims@usgs.gov); Marty Kelly: Ron Basso; Richard L Kane Subject: Re: Developing a Response to M. Johnsons" May 2 E-Mail Date: Wednesday, May 04, 2011 9:55:21 AM Attachments: ATT00001.png

The cost can be a little confusing. Please that at SE Fork we split that cost between SWFWMD-Data program and Min flows project. Installation cost at SE is less than Halls River since the gage house is already set up and we only have to purchase index-velocity meter and install. Halls River cost are from scratch. Also the terminology for Doppler's can also be quite confusing. I think Mr. Johnson was confusing ADCP discharge

measurements with Acoustic Doppler Meters. I have provide some simple definition that you can use if you think it will help.

ADCP (Acoustic Doppler Current Profiler) - we use this for making discharge measurement from boats.

**ADV** - Acoustic Doppler Velocity meter, also called a Flow Tracker, is used to make wading discharge measurements (these have for the most part replaced mechanical meters)

**ADM** - Acoustic Doppler Meter - there are several types (side looking, uplooking, point velocity) and these are use to measure a cross-sectional velocity on a continuous basis

**Index velocity Method** - this method uses the ADM velocity cross section (vertical or horizontal) with a measured velocity cross-section from ADCP or ADV measurement (along with other parameters of stage and discharge) to develop an index-velocity discharge rating. We use these types of ratings with the stream is affected by backwater, either from tidal situation or when large river back up flow into smaller streams.

**Stage discharge method** - this method uses stage and discharge from streams not affected by tidal or back water to develop a discharge rating curve.

Richard L. Kane Associate Center Director for Data U. S. Geological Survey Florida Water Science Center 10500 University Center Dr., Suite 215 Tampa, Fl. 33612 rkane@usgs.gov (813-498-5057) FAX (813-498-5001) Cell 813-918-1275

# Attachment E

#### E-Mail (with e-mail string deleted) from Doug Leeper to Martyn Johnson, Dated May 6, 2011

From: Doug Leeper
To: "martynellijay@hotmail.com"
Cc: Richard Kane (rkane@usgs.gov); Kevin Grimsely (kjgrims@usgs.gov); Ron Basso
Bcc: Marty Kelly; Cara S. Martin; Mike Heyl; Sid Flannery; Karen Lloyd; Jay Yingling; Yassert Gonzalez; kwatson@hsweng.com
Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns
Date: Friday, May 06, 2011 3:18:00 PM

#### Martyn:

Thanks for your recent comments regarding data collection in the Southeast Fork of the Homosassa River. Based on your concerns, I'm sure that you will be interested in learning that earlier this year, as the District was planning for our next fiscal year budget, we requested funding for installation and maintenance of acoustic Doppler instrumentation at the USGS Southeast Fork gage site and for equipping a site in Halls River for measurement of discharge and other parameters. Note that if we receive the requested funding, and I emphasize "if" as we are in a time of great budgetary uncertainty, the Southeast Fork and Halls River sites will be outfitted with acoustic Doppler meters (ADMs). The ADMs would be permanently mounted at the gage sites and used to collect continuous velocity information. Boat-mounted acoustic Doppler current profilers (ADCPs), and/or hand-held acoustic Doppler velocity (ADV) meters would be used as they are currently used at existing gage sites in the system to measure cross-section velocities, which could be used along with other information to develop index-velocity discharge ratings for the sites. These ratings could be used in combination with the ADM data to calculate discharge at the sites. Costs associated with maintenance and data collection at USGS sites may be expected to vary depending upon the instrumentation needed, maintenance requirements, and so forth. Current cost for data collection and site maintenance at a standard site where stage is measured and used to calculate discharge run about \$16K annually, with an additional cost of approximately \$7.5K for water quality parameter measurement. Current cost for data collection and site maintenance at a site equipped with Doppler instrumentation runs about \$30K annually, plus the approximate \$7.5K associated with water quality data collection. Initial costs for establishment of a Dopplerinstrument equipped site can vary considerably, depending on existing site conditions. For example, outfitting the existing Southeast Fork site with Doppler equipment will cost \$12K, while establishing a new, fully-equipped site in Halls River will cost \$24K.

I hope you find this information useful as you continue thinking about protection of the Homosassa River system.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: <u>doug.leeper@watermatters.org</u> Web Site: watermatters.org

#### May 18, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail correspondence concerning comments from Mr. Martyn Johnsor regarding discharge measurement in the Homosassa River system

This memorandum documents correspondence between Mr. Martyn Johnson, Mr. Doug Leeper (with the District) regarding concerns expressed by Mr. Johnson regarding measurement of discharge in the Homosassa River system. Copies of electronic mails associated with this issue are attached to this memorandum.

DAL

Attachments:

A - E-Mail from Marty Johnson to Doug Leeper, Dated May 14, 2011 B - E-Mail from Doug Leeper to Martyn Johnson, Dated May 18, 2011

# Attachment A

#### E-Mail (with string of additional e-mails) from Martyn Johnson to Doug Leeper, Dated May 14, 2011

From: Alan Martyn Johnson
To: Doug Leeper
Cc: rkane; Kevin J Grimsley; Ron Basso
Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns
Date: Saturday, May 14, 2011 1:42:35 PM

Doug,

Thanks for the information. For some reason your message did not show up in my in box until today although I note it was sent May 6. The wonders of modern communication, not to worry!

#### This is good news providing the 'if' does not get in the way! Do you have any idea about the timeframe for the budget approval?

I have been in contact with three manufacturers:

Sontek; who suggested their Argonaut-SW Shallow Water Current Meter as a low cost approach at \$7K

Nortek; who suggested their Easy Q Meter at \$8.5K

Teledyne; who suggested their Channel Master at \$10K linked to their StreamPro at \$16K for linking into the USGS system.

The first two units have internal data collection for retrieval on site.

I also asked about rental this is possible with Nortek and Teledyne and a company TRS was referenced. Very interesting follow up conversations with both Nortek and Teledyne.

# ALL VERY INTERESTING BUT, I have no doubt that the best alternative is to hope that the budget for the monitoring is approved. I will not do anything further on this until we hear more about approval.

I was planning on contacting the USGS office in Atlanta to see if they could help on this important monitoring/accuracy issue by finding a spare unit to provide monitoring for a month or two, or find someway to rent a unit. I will put such ideas on hold for right now.

Doug,

I suspect that you were very instrumental in getting these items included in the budget. Thanks for your efforts on this and please pass on my thanks to others who helped or took the initiative.

I do plan on taking a closer look at the water chemistry data you shared with me sometime back. Not forgotten just had a lot of other things on recently.

Martyn

From: Doug.Leeper@swfwmd.state.fl.us To: martynellijay@hotmail.com CC: rkane@usgs.gov; kjgrims@usgs.gov; Ron.Basso@swfwmd.state.fl.us Date: Fri, 6 May 2011 15:18:40 -0400 Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

#### Martyn:

Thanks for your recent comments regarding data collection in the Southeast Fork of the Homosassa River. Based on your concerns, I'm sure that you will be interested in learning that earlier this year, as the District was planning for our next fiscal year budget, we requested funding for installation and maintenance of acoustic Doppler instrumentation at the USGS Southeast Fork gage site and for equipping a site in Halls River for measurement of discharge and other parameters. Note that if we receive the requested funding, and I emphasize "if" as we are in a time of great budgetary uncertainty, the Southeast Fork and Halls River sites will be outfitted with acoustic Doppler meters (ADMs). The ADMs would be permanently mounted at the gage sites and used to collect continuous velocity information. Boat-mounted acoustic Doppler current profilers (ADCPs), and/or hand-held acoustic Doppler velocity (ADV) meters would be used as they are currently used at existing gage sites in the system to measure cross-section velocities, which could be used along with other information to develop index-velocity discharge ratings for the sites. These ratings could be used in combination with the ADM data to calculate discharge at the sites. Costs associated with maintenance and data collection at USGS sites may be expected to vary depending upon the instrumentation needed, maintenance requirements, and so forth. Current cost for data collection and site maintenance at a standard site where stage is measured and used to calculate discharge run about \$16K annually, with an additional cost of approximately \$7.5K for water quality parameter measurement. Current cost for data collection and site maintenance at a site equipped with Doppler instrumentation runs about \$30K annually, plus the approximate \$7.5K associated with water quality data collection. Initial costs for establishment of a Dopplerinstrument equipped site can vary considerably, depending on existing site conditions. For example, outfitting the existing Southeast Fork site with Doppler equipment will cost \$12K, while

establishing a new, fully-equipped site in Halls River will cost \$24K. I hope you find this information useful as you continue thinking about protection of the Homosassa River system.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Monday, May 02, 2011 3:35 PM
To: Doug Leeper
Cc: Ron Basso; rkane; Kevin J Grimsley

Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

Doug,

Thanks for keeping me informed of the plans for the working group.

I remain extremely concerned about the measurement of flows particularly from the SE Fork. I think we agree that the flow from the various springs in this section of the river provides the bulk of the lower salinity water which is critical to the conditions in the Homosassa River.

I am following up to get information about a suitable Acoustic Doppler Current Profiler that could be installed permanently to measure the flow at the SE Fork gage site. I have no doubt that the USGS and SWFWMD have much more ability to suggest a suitable unit, but the reluctance to deviate from the line that the "*data that are available are the best available information and have been developed using accepted* 

and reviewed methods" makes me more determined to be better informed about suitable equipment and general costs before requesting that such equipment be considered for installation.

You will no doubt recall at the last workshop you did consider the possibility of setting a minimum flow for the SE Fork alone, good idea and worthy of further investigation.

As I recall there is comment about flow from the SE Fork declining over the study period in the peer review draft report. The reported data only considers the 'estimated/calculated' flows. Commentary from local residents tends to indicate that the reductions are much greater than reported. The frailities of both these assessments of this critical flow makes it paramount that we assure hard facts replace estimates calculated from questionable equations and the difficulty of quantifying commentary. I look forward to any discussion and or consideration to installation of a ADCP at this location.

As I kayak this section of the river I notice the changes in the vents, of particularly note recently is a vent area/depression center-left stream about three-quarters of the way upstream from the bridge. Two of the smaller vents have become more active with limestone (presumably) particles clearly evident in the flow. These particles appear similar to those deposited just upstream of the gage site, see photos attached (no weed growth).

Also in the photographs you can see the stack of rip-rap concrete bags that further contribute to the eddy current I have mentioned before. The occasional higher salinity readings at this gage site I strongly believe are the result of these eddy currents drawing a thin layer of higher salinity water along the concrete embankment downstream of the gage site. I am sure that if I had dye available to inject into the flow at the concrete embankment there are a few occasions where I could have visually confirmed this happening. Observation of the small clumps of weed being drawn along the concrete wall can frequently be seen at times the stage level is increasing. This false data unfortunately is used in Section 2 of the July 2010 report and brings some of the regression analysis into question. Doug,

I appreciate your continued efforts regarding the Homosassa River. I heard on the telecast of your presentation to the Board of Commissioners that input from interested parties is keeping you busy. We have genuine concerns and appreciate your time dealing with these concerns but trust some of your time is spent relaying our concerns to SWFWMD's Board.

Thanks, Martyn

From: Doug.Leeper@swfwmd.state.fl.us To: martynellijay@hotmail.com CC: Ron.Basso@swfwmd.state.fl.us; rkane@usgs.gov; kjgrims@usgs.gov Date: Wed, 27 Apr 2011 09:12:19 -0400 Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

#### Martyn:

I'm writing to let you know that in response to your recent e-mails, I have been in contact with staff from the USGS and others regarding development of discharge records for sites in the

Homosassa River system. It appears that the data that are available are the best available information and have been developed using accepted and reviewed methods. I'm sure that all who are interested in collecting and using the discharge data support the review and possible enhancement of approaches that could be used to improve the accuracy of the data. Of relevance to your concerns about the measurement of discharge in the Homosassa River system, I am pleased to inform you that the District plans to convene a working group for discussion of issues related to minimum flows development for the Homosassa and other coastal spring-dominated river systems. I believe that discussion of the measurement of discharge in the Homosassa River system and other local coastal systems, including the Chassahowitzka, Weeki Wachee and Crystal River system would be an appropriate topic for the working group to explore. Although we are only in the early stages of developing the working group, I envision that the stakeholders group will include representatives from governmental organizations and local stakeholders groups, such as the Save the Homosassa River Alliance. I expect that the working group may meet on an approximate monthly basis for six months or so for discussion of: existing data and minimum flow methodologies and projects; studies or other data collection/analysis efforts that could be implemented to enhance the District's development of minimum flows for the Chassahowitzka, Crystal, and Homosassa River systems; reevaluation of adopted minimum flows for the Weeki Wachee River system; and evaluation of compliance with minimum flows that are ultimately established for each of these river systems. I will certainly keep you apprised of developments related to the planned work-group process.

I look forward to continuing to work with you on the development of minimum flows for the Homosassa River system.

Sincerely,

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Thursday, April 14, 2011 9:07 AM
To: Doug Leeper; rkane; Ron Basso; Kevin J Grimsley
Cc: Dana Bryan; lee.edmiston@dep.state.fl.us; jdweaver@usgs.gov
Subject: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns

Gentlemen,

I am now back in the USA and disappointed that there is no response to my e-mail of March 15 and the related ones in February.

AS POINTED OUT THE EXPLANATIONS OF THE DATA GENERATED BY THE USGS WHICH IS USED EXTENSIVELY IN THE DEVELOPMENT OF THE MINIMUM FLOWS FOR THE HOMOSASSA RIVER ARE QUESTIONABLE.

It is inconceivable that given the attempts I have made to get to the true evaluation of the flows in the Homosassa River that an 'ostrich mentality' appears to prevail. There have been a number of indications that USGS and SWFWMD are open to looking at and refining the methods and equations

used to report the flows, but nothing happens other than shallow attempts to defend the status quo. I could conclude that someone is scared to admit that hundreds of thousands of dollars have been spent trying to justify that further extraction of ground water from the aquifer will not damage this unique ecosystem only to find that some of the basic data used in the studies may be inaccurate. Also, it is becoming increasingly clear that there is little or no interest in giving credence to the long term residents that there are serious changes occuring in recent years in the Homosassa River. These changes are real; barnacles reported further and further up the river are not fictitious they are clear evidence of increasing salinity.

The USGS flow measurements appear to be inaccurate; I specifically would reference what happens to the spring derived waters in the SE Fork if the USGS equation is correct. I have raised this point a number of times.

I have no doubt that the people that developed these equations did so with the best of intent, but as we look more critically at these there are grounds to rethink how accurate they are. Further, I have pointed out the 'eddy current' that draws higher salinity water to the sensors at SE Fork Site 02310688. There appears to be no attempt to look at this or correct the matter.

My attempts to address these matters by allowing those closest to the issue take credit for recognizing and correcting the errors appear to be falling on deaf ears, or reluctance to face the

realities. Therefore, I have little choice other than to start bringing this matter to the attention of people higher in the organization structures so they are informed before the Homosassa River is no longer suitable to be recognized as an Outstanding Florida Water (as it was by the Florida Legislature in1992) which is a water designated worthy of special protection because of its natural attributes.

Martyn Johnson

From: martynellijay@hotmail.com

To: doug.leeper@swfwmd.state.fl.us

CC: kjgrims@usgs.gov; rkane@usgs.gov; ron.basso@swfwmd.state.fl.us

Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

Date: Tue, 15 Mar 2011 03:30:34 -0400

Doug,

I did see your e-mail a few days ago, but did not have time to look at the graph in detail or formulate a reply due to the limited internet access I have.

I will also have to be brief now as I am still out of the US.

Frankly, the explanation is in my opinion shallow. Quick list of key points;

1. There appear to be 42 field measurements on the USGS web page since 2004 not 40.

2. No data is provided of how the results were calculated...field measurements were taken over various time intervals...how was dS/dt used (another approximation?)

3. Approximately 36% of the results have differences over 20%. From drawing a line on the graph it appears that 12% are at or above 20% negative and 24% are at or above plus 20%, with 7 of the 10 positive differences well above 20%....45% and 60% being noted.

4. There is no explanation of where the water goes (according to the equation scenario as presented in my e-mail).

5. There is no explanation about the notations such as good, poor and adjustment mentioned in my e-mail.

I have heard comments from various people that the equation is refined as more data/observations become available but it appears that there is little evidence that supports such open minded approach. The continued efforts to defend questionable data are very concerning. I trust this will not have to be opened to a wider assessment when I return to the US.

Are the any thoughts about my comments on the Homosassa River Site or are tese still being formulated?

Martyn
From: Doug.Leeper@swfwmd.state.fl.us To: martynellijay@hotmail.com CC: kjgrims@usgs.gov; rkane@usgs.gov; Ron.Basso@swfwmd.state.fl.us Date: Tue, 1 Mar 2011 11:31:12 -0500 Subject: RE: SE Fork Homosassa River Flow Calculation Concerns

#### Martyn:

Thanks for the e-mail you sent to me on February 19, 2011, concerning measurement and reporting of discharge at the SE Fork Homosassa Springs gage site. I spoke with staff from the United States Geological Survey about your e-mail and was provided with information which indicates that discharge estimates based on the regression equation approach correspond well with discharge measurements made at the site. The figure below, provided by Kevin Grimsley, shows the relationship between 42 discharge measurements (Measured Q) made between 2004 and the present time, and corresponding discharge estimates based on the regression approach (Computed Q). Kevin informed me that the average difference between the computed and measured values is -2.4%; a difference that seems to be quite acceptable, given the complexities of flows in the SE Fork.

#### **Error! Filename not specified.**

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Saturday, February 19, 2011 3:30 PM
To: Doug Leeper
Cc: Kevin J Grimsley; rkane; Ron Basso
Subject: SE Fork Homosassa River Flow Calculation Concerns

Doug,

Attached are two files that address the concerns I have mentioned before about the equation used to calculate the flow from the SEFork. In a recent e-mail I commented about your explanation, indicating that the average of the measurements and the actual daily mean discharge are one and the same thing. There is no separate measurement of the actual mean discharge. Quote

Individual discrete discharge estimates may exhibit moderate variation from actual physical conditions at the site, but the average of the composited discrete measurements made over a 24-hour period has been shown to correspond well with actual daily mean discharge.

#### End Quote.

In the Word file I have provided a detailed explanation of the numbers as I see them and detail that these are not moderate variations from actual. I see them as frankly inexplicable variations from actual and logical explanation. The Excel file has the supporting data/calculation/analysis from the base

data copied from the USGS web site and the calculation equation as published.

I decided to leave my discussion in the word file as the included charts did not want to copy into an email and I hope it easier for you and others to review.

Please take the time to look over my comments, if I am wrong I will happily admit it providing there is valid explanation.

I know that the reaction may be that if I am right it will require a good explanation of why this was not recognized earlier and maybe why so much money has been spent on studies that appear to come to conclusions vastly different to what people are observing. My aim is to understand how the observations of good honest people do not match the 'scientific' data.

A lot more effort is needed to understand why the Homosassa River is deteriorating and not into finding ways to justify more water extraction from the aquifer. This is like Congress years ago ignoring the foolishness of the mortgage market that resulted in the crash, or the damage that has been even more dramatic in other rivers where recovery is now necessary. Transferring the problem is not the solution. I have started to look at the water chemistry data you shared earlier and while comment soon. Do not dismiss my analysis without a good reasoned argument, as you may have gathered I do not disappear easily.

Thanks for your continued attention to this matter of preventing further destruction of the Homosassa River. Simple solution is moratorium on drilling anymore wells or increasing extractions for 5 years for assessment to be validated.

Martyn

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## Attachment B

#### <u>E-Mail from Doug Leeper to Martyn Johnson, Dated May 18, 2011</u> (note: e-mail string deleted)

From: Doug Leeper
To: "Alan Martyn Johnson"
Bcc: Richard Kane (rkane@usgs.gov); Kevin Grimsely (kjgrims@usgs.gov); Ron Basso; Marty Kelly; Sid Flannery; Mike Heyl; Jay Yingling; Yassert Gonzalez; Karen Lloyd
Subject: RE: Homosassa River 02310700 and SE Fork 02310688 Flow Calculation Concerns
Date: Wednesday, May 18, 2011 8:21:04 AM

#### Martyn:

Per your recent request, I'm providing dates for important upcoming activities associated with the District's FY2012 budget ----

May 24, 2011 - FY2012 Budget Update - Update Revenue Estimates following 2011 Legislative Session at the District Governing Board Meeting

June 28, 2011 - Presentation of FY2012 Recommended Annual Service Budget at the District Governing Board Meeting

July 26, 2011 - FY2012 Budget Update & Adopt Proposed Millage Rates for District and Watershed Basins at the District Governing Board Meeting

August 1, 2011 - Submit Standard Format Tentative Budget to Governor, President of the Senate, Speaker of the House, Legislative Committee Chairs, Secretary of the Department of Environmental Protection, and each County Commission

August 30, 2011 - FY2012 Budget Update at the District Governing Board Meeting September 13, 2011 - Public Hearing on the Tentative Budget at the District's Tampa Service Office September 27, 2011 - Public Hearing on the Final Budget at the Tampa Service Office October 1, 2011 – Start of FY2012

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: <u>doug.leeper@watermatters.org</u> Web Site: watermatters.org

#### May 18, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail concerning an article on proposed minimum flows for the Homosassa River that was published in <i>TOO FAR News</i>

This memorandum documents correspondence between Mr. Doug Leeper, with the District, and Al Grubman, President of TOO FAR, Inc., regarding and article on proposed minimum flows for the Homosassa River system that was published in the *TOO FAR News*.

DAL

Attachments:

A – TOO FAR News, March 2011, Volume 232

- B E-Mail from Doug Leeper to Al Grubman, dated May 10, 2011
- C E-Mail from Al Grubman to Doug Leeper, dated May 13, 2011
- D Image from the TOOFAR, Inc. web site obtained on May 18, 2011

## Attachment A

TOO FAR NEWS, March 2011, Volume 232

# **TOO FAR NEWS**



**Protecting & Conserving Our Water** 

March 2011 Volume 232

#### PRESIDENT'S MESSAGE A Valentine Gift

By now you all realize that I am writing this long before you are reading it. I submit it to Jerri. When she has received all the inputs, she formats and assembles the newsletter. Next is our printer and it is obvious what he does so well but the job is not finished yet. The unassembled pieces are picked up. Jan, my lovely wife puts it together. Different people have done it and done it well over the years. Then Jan and I took it on. Shortly thereafter I was told by Jan that I was too slow and she could do it as fast or faster alone. She gets the printed pieces from Steve, the labels from Jerri and puts the entire package together. But it is not done yet. A few Post Office forms and it is all delivered to Vickie at the Post Office. She enforces the rules and standards but also helps. Then a lot of people we don't know sort and deliver the newsletters to you, amazingly quickly.

That is the long way of explaining why I am writing this on Valentine's Day but you will not see it until the last half of March.

But back to the main point: on Saturday morning February 12, I received a call from a top guy at SWFWMD telling us that the Grand Prairie/ Dead River Flats burn was about to start. TOO FAR has been pushing for clearance of this area for many years. Many years of droughts and low rainfall had combined to change the character and appearance of the marshy areas. Our members were concerned that various trees and tall plants that were not previously there were proliferating and choking out overland flow from the Withlacoochee River. Nostalgia was also a factor for some who spoke about seeing the river from a mile away.

Burning a marsh is a complicated endeavor. Moisture in the targeted vegetation and in the ground is critical as is wind and other factors. We have become impatient over the years when conditions and/or priorities did not allow burning. This time everything lined up including the smoke rising fast and blowing away from populated areas. If good conditions continue there will be additional burns.

If we have more average and above average rain years, the wetness will help control the growth. Thank you Southwest Florida Water Management District for the Valentine gift to TOO FAR and the environment.

I worry about our environment and our water. I worry about the Withlacoochee Regional Water Supply Authority planning to take millions of gallons of water a day out of the source of the Homosassa River's water. I am glad to have had some good news to report.

AI

PS: Governor Scott has asked that all of Governor Crist's appointees who have not been confirmed by the Senate reapply. I have reapplied for the position on the Withlacoochee River Basin Board.

## FISHING-N-HOPEFULLY CATCHING

#### ON THE TOURNAMENT TRAIL

It is Saturday, February 12, 2011 at 4:45 a.m. and our team is off to Hickory Point to fish the Harris Chain of Lakes, again. It was cold (upper 30's) and windy (15 – 20 mph) at the start, didn't warn up until around 11 a.m. The weather wasn't good and the catching did not go so well either, but at least there are stories to tell.

Greg caught the first bass, Ron got the net out but Greg said no met was needed, fish was small. Two other fish were caught; one by Ron and one by Greg, but all had to be put back TOO SMALL. Then the next pull came on Ron's line and from what I hear it was the "MOBEY DICK" OF BASS. Ron yells to Greg, "GET THE NET". Greg says take it easy and slow Ron. "GET THE NET" Ron says. Take it easy and slow Ron is told again. Well this LARGE bass got off before the boat. BYE-BYE MOBEY DICK!! Well story has it, that Ron always tells Greg, if you put me on fish "I'll catchem". Well Greg did put Ron on the large bass, but Greg did not know he was supposed to tell I'll catch-em to SET THE HOOK. Ron (I'll catch-em) Zarn has now been told that catching them means getting them into the boat – not just have them grab on to your lure. OH WELL IT SOUNDS LIKE THEY HAD FUN!!!!! Better luck next month guys.

First Place was 16.65 lbs. Second Place was 15.22 lbs. Third Place was 14.7 lbs. Big Bass was 7.99 lbs.

ON THE HOMEFRONT Just a few words from CAPT. MIKE of MOLLY McGEE'S

Hello,

February has continued to produce many good fishing trips. BUT, HELLO UP THERE, please bring on the rain! We need to full up the lakes and rivers. But the good thing is the fish are still showing up.

Chuck reports that he and his family are having great luck on their fishing trips in Little Lake Henderson catching many good size spec's and bass and giant size mud fish all on live minnows.

Over on Lake Spivey, John and Vito are doing well in the mornings, catching many specs and crappie on minnows. Making a nice fish fry last Sunday.

Many still having a lot of luck with minnows and shiners on Franklin Hair Bridge on Gospel Island Road.

Now, since the waters are warming up, the fish are moving to the middle of the lakes, around 8 feet of water. Today, John W. was buying some minnows and told me he's been landing a bunch of nick specs in Big Lake Henderson. When he has time, he buys some of our shiners and heads over to Wildwood to Lake Deaton and has great luck catching nice size bass. Danny Boy and Stan caught about 50 crappie last Sunday on minnows in Lake Panasoffkee.

Well, let's get out here and take a friend fishing, always makes for a good day. Be safe and respect your fellow fisherman, you never know when you may need their help. GOOD FISHING1

Capt. Mike - OUT

#### WE SAY NO! THE HOMOSASSA RIVER SYSTEM IS TOO SENSITIVE FOR ANY FURTHER REDUCTION BY SWFWMD OR REGIONAL WELLFIELDS by Priscilla Watkins for the Homosassa River Alliance

The huge, negative public response to Southwest Florida Water Management District's (SWFWMD) staff recommendations to set the flow level for the Homosassa River at 5% of its "estimated average" flow of 152 cubic feet per second (cfs) or 144.4 cfs has, so far, delayed the scheduled Board vote of approval.

Questions and criticisms of the findings, omissions and methodology have come from experts in water management and commercial fishermen, state regulators, public park managers, engineers, boaters, HRA's volunteer reviewers and other of our members, and even from SWFWMD's hand-selected peer review team. It was a huge response to a technical manual over a very short time span.

So far on the supporting side, there is the lone voice of the county director of Water Resources who appears to have only read the two-page executive summary and asked for clarification on the parameters and salinity terminology before sending in a letter of approval.

Concurrently, there has been an outpouring of opposition to the proposed flow rate being recommended for the Chassahowitzka River system, an 11% reduction. The Chassahowitzka is approximately five miles south of the Homosassa and it draws from the same aquifer whose water source is rainfall over the same 270-square-mile springshed.

Both the Homosassa and the Chassahowitzka are first-magnitude spring systems, two of four along a thirty-five mile span of our coastline, with only 27 first-magnitude springs in the entire state of Florida. Springs such as these are rare.

#### WHAT WE OBJECT TO, IN BRIEF

We believe the historical river flow has already been reduced to a critical point; any further reduction would contradict all the efforts and funds spent to date to protect this coastal area. Lower flow will destroy many species and the delicate ecology of our river and its estuary.

One point we noted particularly was the higher salinity rates now in place as compared to twenty, thirty and fifty years ago. Larger draw-downs from our aquifer will increase that salinity yet the consequences were brushed aside. The only thing they admitted was the extreme sensitivity of creatures in the river system to the slightest change in flow - any draw-down will trigger "significant harm."

We pointed out that the river has suffered a severe drop in flow rate already but the report attributes that to rainfall patterns only. We feel that rapidly increasing population rates since 1960 have made a major impact yet SWFWMD, using models, determined there is only a slightly less than one percent impact to the Homosassa flow from pumping. For that 1% impact we must look at the time span chosen.

The time span chosen to average spring flow at 152 cfs ignored historic records on three of the vents going back to 1931 and *based its data on flow rates from 1995 through 2009 only.* The Florida Almanac 2002-2003 edition put the average flow at 192 cfs; its 2007-2008 edition lowered that to 175 cfs (drops of 20 and 16%). The United States Geological Survey folks, who measure the flow, also recognize a 20-25% drop has already occurred over the past decade. Furthermore, it is impossible to measure the river flow accurately; USGS says that those flow meter measurements are only accurate within ten to fifteen percent, at best. Whose word will we have to take that only 5% is used – that of residents looking at the river daily or SWFWMD staff in Brooksville?

One more point about flow rate measures: SWFWMD's calculation for the South Fork spring is based on a flow measurement of the aquifer level in Weeki Wachee, twenty-five miles away with the Chassahowitzka system between them.

We Say No continued on page 4

Another serious question that needs answering is this: what aquifer amount has SWFWMD based its water availability on? At one point in time we were thought to be water-rich but that was incorrect. As our vice-president, Ron Miller, reminded SWFWMD staff, their own man, John Parker, in 1998 said the earlier reports of 750 to 1,250 feet of potable water in Citrus and Marion counties was overestimated by a factor of three to six. For most of Citrus County the potable lens is generally 200 to 250 feet thick or less. If the allotments are based on that old faulty data we are in really serious trouble.

We also pressed for more serious consideration to the effect on the estuary and all of our protected areas, whether preserves or parks. This impact was barely mentioned.

#### SETTING LEVELS – WHO CARES?

It is a big deal. Florida may have twenty-seven first magnitude springs (at least 100 cfs flow) but on the Gulf side of the state five of the big ones are concentrated right here: three in Citrus County and one each in northern Hernando County and in Dunnellon, Marion County. They are a major attraction for visitors, retirees and wildlife. If the balance is upset and the "harm" spirals out of control, we won't be able to do a quick fix, if we can do any fix at all. SWFWMD has already issued reports for three firstmagnitude rivers in our immediate neighborhood - Weeki Wachee, Chassahowitzka, and the Homosassa. In process are reports on Crystal River, another first magnitude spring system, and three segments of the Withlacoochee River, which runs 86 miles and feeds the Tsala Apopka chain of lakes. Rainbow Springs in Dunnellon, a really massive first-magnitude system, feeds into the Withlacoochee. Incomplete documentation, minimalized impact, incorrect measures matter greatly as all the water management districts prepare for a greater allocation of our water resources. We have to pay attention to this.

#### HOW DOES THIS AFFECT RESIDENTS AND BUSINESSES?

We require potable water to survive and most of our businesses require water in either their processes or at least in providing clean surroundings. While we have a law on the books that says each county must use its own water sources first, it doesn't say "use them wisely or conservatively." Penalties are almost non-existent, there are no water police.

It appears the goal of the flow plans is to tap the aquifer for all it is worth for state uses but not to benefit the residents and businesses now in Citrus County nor to the ecosystems that our rivers support. The Withlacoochee Regional Water Supply Authority has site plans in print for regional distribution well fields running down the county east of US19. We believe this water will go south to serve over-developed counties and perhaps destined to be bottled by a for-profit company with little or no monetary gain and much potential damage for our county.

Remember that for the past two decades we have been beating off attempts by one area or another trying to grab our water? Well, setting low flow levels will give the state WMD data to show "there's plenty there" and we are only doing 15% harm! Drought is a regular occurrence in Florida, taking all that you can is poor long-term planning when our rivers are already stressed from a long stretch of droughts.

#### WHAT IS HRA'S STAKE IN THIS?

Our focus is on The Homosassa River system (four rivers and at least 19 springs), which is under severe stress. We, the county, plus state and federal governments have been working together to identify contributors to the river stress and protect the 270 square mile springshed from further or new contaminants. To that end, certain areas around the Homosassa River system (and our other local first magnitude spring systems) have been identified, studied and placed under protection. We have St. Martin's Marsh Preserve, Chassahowitzka National Wildlife Refuge, Crystal River State Archeological Site, Homosassa Springs State Wildlife Park, and the entire Big Bend Preserve, which protects the estuarine systems from Apalachicola to the Levy/Citrus border. We have been working for years to control pollutants statewide. If a local, state or national legislative or agency proposal will harm the system or its springshed, we are going to be heard on the subject.

#### ARE WE ALONE IN THIS CONCERN?

No. The Chassahowitzka report came out at the same time as ours - SWFWMD proposed an 11% reduction rate on that system. The Chassahowitzka River Restoration Committee, other organizations and individuals are united in vociferous opposition and have forced SWFWMD to delay its presentation to the Board for a vote as well.

Weeki Wachee, already severely degraded with a 16% decline in flow since 1961, had a further 10% reduction proposed in 2008. The report did not include anticipated fish kill rate at a 10% reduction, but said the river could still be home to the entire gulf population of manatees. That side of Hernando County is sparsely populated, and the river is owned by SWFWMD; we missed hearing objections there.

#### WHAT IS NEXT?

We are asking each of you to call your County Commissioners and the Citrus County Director of Water Resources and urge them to access the Report at www.watermatters.org and all of the public comments that are available online. We hope you will tell them that, after reading the report, they need to let SWFWMD staff know it should be recommending zero percent (0%) reduction in flow on the Homosassa and a complete review of the Chassahowitzka report with a view towards addressing citizens' concerns.

Commissioners, 352-341-6560: Winn Webb, Joe Meek, John Kenney, Dennis Damato, Rebecca Bays. Water Resources, 352-527-7646: Robert Knight.

We ask you to immediately email SWFWMD with your objection to the rate for Homosassa, telling them 0% should be the level. SWFWMD, Resource Projects Department, doug.leeper@swfwmd.state.fl.us

We will continue to talk with SWFWMD until our concerns are addressed or the vote is taken. If data is not included or corrected, we will have to move upward in the chain of command. The time is now for our governing bodies of the water distributors and of the county to educate themselves about flow issues and get involved. It will not be long before the state Legislators will be forced to take a public stand.

Sidebars

#### BACKGROUND

Simply put, SWFWMD is required by state law to set flow rates on all rivers, wetlands and lakes so they can issue water permits or water transfer rights based on what "should" be available in the aquifer. They were to study the systems, measure the flow, research all available data from its own and other agencies, make projections and suggest a level that would, in their own words, *harm no more than 15% of the ecosystem*.

Once flow rates and water levels are approved, SWFWMD (and the other districts in Florida) will use those levels to determine how much more can be pumped from the aquifer and allocated to residents, businesses and industries, above and beyond what is already on the books.

POPULATION GROWTH Citrus County 1960 9,268 1970 19,196 1980 54,703 1990 93,515 2000 118,085 2009 140,357 estimated TOOFAR INC PO BOX 2709 INVERNESS, FL 34451 PRST STD US POSTAGE PAID PERMIT NO 31 INVERNESS FL 34451

To current resident or



## **BE THERE!**

East Citrus Community Center

Thursday March 24, 2011

Board Meeting 5:30 pm

General Meeting 7 pm

Speaker: Philip Rhinesmith

**Senior Environmental Scientist** 

SWFWMD

## **Attachment B**

#### E-Mail from Doug Leeper to Al Grubman, dated May 10, 2011

From: Doug Leeper
To: grubman1@gmail.com
Bcc: Marty Kelly; Mike Heyl; Sid Flannery; Ron Basso; Cara S. Martin; Bill Bilenky; Jay Yingling; Yassert Gonzalez; Mark Hammond; Robyn O. Felix
Subject: Response to Recent Article in the TOO FAR News
Date: Tuesday, May 10, 2011 3:46:12 PM

Dear Mr. Grubman:

I recently read the March 2011 edition of the TOO FAR News and would like to offer some thoughts on a few issues and comments that were included in Ms. **Priscilla Watkins' article concerning** development of minimum flows for the Homosassa River system.

First, there appears to be a misunderstanding concerning the format in which proposed minimum flows have been and will likely continue to be expressed for the river system. In her article titled "We Say No, The Homosassa River System is Too Sensitive for Any Further Reduction by SWFWMD or Regional Wellfields", Ms. Watkins writes that District staff recommends establishing a minimum flow for the river system at 144.4 cubic feet per second (cfs), a flow rate corresponding to a five percent decrease from the 152 cfs flow identified as the "estimated average" flow for the system. The District's currently proposed minimum flows for the Homosassa River system are actually not a static or single rate of flow, but instead are expressed as a percentage-of-flow reduction (or retention) for the full range of flows that would be expected for the system in the absence of water withdrawals. To aid in the understanding of the percentage-of-flow concept for minimum flows development, consider a proposed minimum flow that allows for up to a five percent reduction in flows in the Homosassa River system. Flows from the headwaters area of the system are currently measured at sites near the Homosassa Main Springs pool and in the Southeast Fork of the Homosassa River, and the combination of these flows provides a means for describing flows in the system. So, for periods of relatively high rainfall when combined flows at the two sites may be on the order of 200 cfs, the hypothetical minimum flows would be met if flows actually equaled or exceeded 95% of 200 cfs, or 190 cfs. Similarly, during drought periods, the combined flows could be expected to total 70 cfs in the absence of withdrawals, and flows of 66.5 cfs (95% of 70 cfs) would be sufficient for compliance with the hypothetical minimum flows. In practice, compliance with minimum flows would be determined based on evaluation of potential withdrawal-related flow reductions using a computer model of the regional aguifer system (the Northern District model). Withdrawals that would result in more than a five percent flow reduction (for a hypothetical minimum flows represented by an allowable five percentage-of-flow reduction) would be

considered to cause violation of the minimum flows and would not be permitted.

The District has received substantial criticism regarding the draft report outlining proposed minimum flows for the Homosassa system. However, in addition to support that has been expressed by the Director of Water Resources for Citrus **County, the panel of independent scientists that reviewed the District's draft report** on proposed minimum flows for the system note that information presented in the **report "...is adequate to conclude that the proposed maximum 5% reducti**on in Minimum Flow satisfies the language and intent of the Statute and will result in **"no significant harm" to the flora and fauna of the Homosassa River System." In** addition, the Florida Fish and Wildlife Conservation Commission in their review of the proposed minimum flows, note that the District "has done a commendable job of developing the conservative MFL [minimum flows and levels] for the Homosassa **River system", although the Commission does recommend that the District** consider some additional information prior to finalization of any minimum flows for the system.

A number of issues related to technical aspects of the minimum flows development **process that were identified in Ms. Watkins' article also require additional** discussion or consideration. These issues are: 1) a perceived lack of thoroughness **regarding the District's efforts; 2) the characterization of existing withdrawal** impacts; and 3) the measurement and use of discharge records for developing minimum flow recommendations.

With regard to perceived thoroughness of the District's technical analyses, Ms. Watkins suggests that consequences of salinity changes in the Homosassa River system that may result from water withdrawals have been "brushed aside" by District staff. To the contrary, evaluation of changes to salinity-based habitats that could occur as a result of water withdrawals is an integral component of the development of minimum flows for tidally influenced systems, and these types of analyses were specifically used to develop minimum flow recommendations for the Homosassa system. It was also suggested that the District has not seriously considered withdrawal impacts on the Homosassa River estuary and all protected areas in the vicinity of the river, noting that impacts to these systems "was barely mentioned", perhaps in reference to staff discussion of the subject at public workshops or in reference to summary information contained within the draft report on proposed minimum flows for the system. District staff endeavored to evaluate withdrawal related impacts to the entire Homosassa River system and believe that the approach that has been implemented will be protective of the greater ecosystem.

In her summarization of District findings regarding impacts of existing withdrawals, Ms. Watkins is correct in noting that current withdrawals in the northern portion of the District have resulted in about a one percent decrease in discharge from springs of the Homosassa system. This finding is not, however, based on flow records for the period from 1995 through 2009, as was suggested. The withdrawal impact is, rather, based on evaluation of the difference in the potentiometric surface (i.e., the elevation to which groundwater would rise in a tightly sealed well) of the Upper Floridan Aquifer system and spring discharge for model scenarios that include water withdrawals corresponding to regional water use in 2005 and a pre-development scenario that excludes all withdrawals. With regard to the modeling of withdrawal impacts in the Homosassa area and throughout the northern portion of the District, the pre-development scenario used for these evaluations was developed based on targeting pre-development potentiometric surface information published by the United States Geological Survey. The model used for evaluating impacts was calibrated (i.e., simulated spring flows and aquifer water levels were closely matched to observed data) for steady-state 1995 calendar year conditions and transient conditions from 1996 through 2002.

In her discussion of area water use, Ms. Watkins asks "what aquifer amount has SWFWMD based its water availability on?" Water availability for the region is determined based on up-to-date understanding of regional water sources, including both surface and ground waters, and comparison of model-predicted effects of withdrawals with constraints determined by minimum flows and other regulatory criteria established for area water bodies. In other words, the availability of water for reasonable and beneficial human use as well as natural system protection and persistence will be determined based on the best available current information and compliance with District regulations. With respect to the Homosassa River system, existing withdrawal impacts are estimated to reduce spring discharge about one percent, and impacts based on projected water demand for 2030 are predicted to result in a two to four percent reduction in flows. This information suggests that groundwater availability is not currently, and during the next 20 years is not expected to be limited by minimum flow constraints, assuming that the estimated flow reductions do not exceed allowable percentage-of-flow reductions associated with established minimum flows.

Ms. Watkins is correct in noting that discharge records for the period from 1995 through 2009 were used for analyses supporting development of minimum flow recommendations. This period represents the time-span for which we have relatively detailed and complete discharge records that are appropriate for developing daily mean values that may be used for modeling environmental responses to flow reductions. Historical records pre-dating this period are available for the Homosassa Springs and Southeast Fork gage sites in the river system, but the discontinuous and instantaneous nature of these data limits their usefulness for modeling purposes. For example, the records typically correspond with discrete measurement of discharge associated with an instantaneous tidal stage, and do not represent daily mean values. Because it is well documented

that discharge from the Homosassa Main Springs and other springs of the system is affected by tides, instantaneous discharge measurements can vary considerably throughout any given day, depending on the tide stage at the time of measurement. This differences in how discharge records were derived, i.e., as instantaneous or daily mean values, and the lack of continuity in the historical records led staff to use the discharge record from the 1995 through 2009 period for minimum flows and levels modeling purposes. Incidentally, inclusion of available historic discharge records with the more recent records does not substantially affect statistics (e.g., mean and median values) associated with the daily means discharge record. Also, variation that is evident in the composited historical and recent daily means record is consistent with rainfall patterns suggesting that temporal differences in reported discharge can be attributed primarily to rainfall variability. Finally, the issue of "historical" vs. "recent" discharge records for sites in the river system was discussed at the minimum flows and levels public workshop held in Lecanto this past January, and will be summarized in an updated version of the report on proposed minimum flows for the Homosassa River system.

With respect to development of minimum flows for the Homosassa River system, **Ms. Watkins writes that "[i]t appears the goal of the flow plans is to tap the** aquifer for all it is worth for state uses but not to benefit the residents and busine**sses now in Citrus County nor to the ecosystems that our rivers support."** The District is, in fact, developing minimum flows for the Homosassa River system in response to statutory mandates that require establishment of minimum flows and levels for the prevention of significant harm to priority water bodies that may be associated with water withdrawals, and which also require identification of the system as a priority water body based on its classification as a first-magnitude spring system. Establishment of minimum flows for the Homosassa River system is expected to benefit residents and businesses of Citrus County and the state of Florida, visitors to the region, and the non-human components of the greater ecosystem.

Ms. Watkins notes that the Weeki Wachee system has been "severely degraded with a 16% decline in flows since 1961" and "had a further 10% reduction proposed in 2008." The minimum flows established for the Weeki Wachee River system in 2008 require maintenance of 90% of the natural flows of the system. This minimum flow, like all established minimum flows or levels does not represent a proposed reduction in flows or levels, but rather identifies a threshold or criterion that is intended to serve as a limit to further withdrawals that could result in significant harm to the resource. Analyses supporting development of minimum flows for the Weeki Wachee River system indicate that water withdrawals have reduced natural flows in the system by nine percent.

As you know, the District is committed to developing the best, scientifically

defensible minimum flows for protection of the Homosassa River system. With regard to this position, the District has committed to hosting a series of public workshops for discussion of technical issues concerning minimum flows development for the Homosassa system and other spring-dominated tidal rivers of the Springs Coast. This forum will provide an appropriate avenue for addressing a number of observations and suggestions made by interested stakeholders concerned with protecting our valuable coastal resources. As envisioned, the public workshops will focus on:

- existing data, minimum flow methodologies, and opportunities for alternative analyses supporting minimum flows development for Springs Coast systems;
- new studies and/or other data collection/analysis efforts that could be implemented to enhance minimum flows development or reevaluations; and
- development of monitoring/analytical strategies and time-lines for minimum flows compliance evaluations and environmental protection.

The major systems to be discussed during the workshops will include the Weeki Wachee, Chassahowitzka, Crystal and Homosassa rivers and associated springs and tributaries. The focus for the Weeki Wachee system will be on establishing the appropriate period and techniques for reevaluation of the minimum flows that have been established for the system. For the Chassahowitzka, Crystal and Homosassa systems, it is anticipated that the venue will provide the opportunity to identify the steps and processes necessary to move forward in establishing scientifically defensible minimum flows for these important coastal systems.

I look forward to continuing to work with you and other members of TOOFAR on the development of minimum flows for the Homosassa River system and other **area water bodies. If you are of the opinion that the comments and thoughts I've** outlined here may be of use to other TOOFAR members, I would urge you to consider including the body of this e-mail in a future edition of the TOO FAR News.

Sincerely,

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: doug.leeper@watermatters.org Web Site: watermatters.org

IMPORTANT NOTICE: All E-mail sent to or from this address are public record and archived. The Southwest Florida Water Management District does not allow use of District equipment and E-mail facilities for non-District business purposes

## Attachment C

#### <u>E-Mail from Al Grubman to Doug Leeper, dated May 13, 2011</u> (Note: e-mail string deleted)

From: Alan Grubman To: Doug Leeper Subject: Re: Response to Recent Article in the TOO FAR News Date: Friday, May 13, 2011 11:09:26 AM

Hi Doug,

Thanks for your well written letter. I have already sent a copy to Priscilla. In support of fairness and, hopefully, substantially satisfying the objectives of your request, we will:

- Post your letter on our web site

- Have copies of your letter on the entry table at our next two meetings and announce their availability.

- We will put a notice in our June newsletter (sorry May already went to press) advising of your letter, advising that it is on our web site and offering to send it out by e-mail or snail mail.

- We will absorb all costs.

Best Regards,

AI

## Attachment D

## Image from the TOOFAR, Inc. Web Site obtained on May 18, 2011

	TOOFAR, Inc. and tutue of enteral resources for present and future general resources for present and future general resources the present and future general resources the present and future general resources and interactions with all entities charged with those responsibilities.	
TWIT I LTER	PO BOX 2709, Inverness FL 34451 Phone (352) 726-5004 Email: <u>tootarino@earthlink.net</u>	
Purpose of this voice concerning our water, it's	<b>Vebsite</b> : To raise public awareness about the ever increasing issues we are facing inregards to our environment, particular contamination, depiction and destruction. <u>Starthere</u> to learn more.	G,
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September 27, 2011

#### MEMORANDUM

TO:	File
FROM:	Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District
SUBJECT:	Electronic mail correspondence concerning comments from Mr. Ron Miller regarding Bluebird Springs

This memorandum documents correspondence between Mr. Ron Miller, Ms. Julie Espy with the Florida Department of Environmental Protection and Mr. Doug Leeper with the Southwest Florida Water Management District regarding concerns expressed by Mr. Miller for Bluebird Springs. Copies of electronic mails associated with this issue are attached to this memorandum.

From:	Ron Miller
To:	<u>Michael G. Czerwinski; Rolf Auermann</u>
Cc:	Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin; Dave Dewitt;
	Julie Epsy; Doug Leeper; Al Grubman; Art Yerian; Veronica Craw; Robert Knight; Brent Whitley
Subject:	Re: Bluebird Springs water quality
Date:	Wednesday, June 29, 2011 5:00:39 PM

Hi Mike,

Yes, we do read the water depth on a SWFWMD depth gage. Today it was slightly higher than last month: 1.67 vs 1.6 feet. The BB readings range from 1.5 to 2.3 feet.

Rolf: would you email your file of BB data to Mike.

Thanks,

Ron

From: Michael G. Czerwinski Sent: Wednesday, June 29, 2011 1:30 PM To: 'Ron Miller' Subject: RE: Bluebird Springs water quality

Ron

Very good information, thank you for the data. You are probably correct about the flow being an important factor, To help you put your observation into context / perspective, we have observed a drop in wetland water levels of 3-4 feet at the 4 wetlands (2 "treatment" wetlands within SMW and 2 "control" wetlands within the State Forest west of US 19) we are monitoring for the Sugarmill Woods Wellfields. The water levels in these wetlands was near the seasonal high level this April in response to the end of March precipitation events. These are both the highest (April 2011) and lowest (June 24, 2011) water levels recorded since we started monitoring them in October 2009. The last time water levels were as low as this week was in June 2008 (June 2002 was Period of Record low ) and as high as this April was February 2006.

If you also take water level (depth) readings at Bluebird, you may want to compare yours to these dates and see if there is a correlation.

However, the algae bloom may more be related to other conditions including many cloudless days in May and June (high incident sunlight), nutrients, as well as flow.

Finally, do you have a POR excell file of the data you collect at Bluebird that you can share with us? WE may want to incorporate some of that into our analysis. Mike



From: Ron Miller [mailto:rmille76@tampabay.rr.com]
Sent: Wednesday, June 29, 2011 12:31 PM
To: Dave DeWitt; Mike Cerwinski; Julie Epsy; Doug Leeper; Al Grubman; Art Yerian; Veronica Craw; Robert Knight; Brent Whitley
Cc: Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin
Subject: Bluebird Springs water quality

Hi all,

Today we tested Bluebird Springs. The Sechii Depth at the Main Spring (site #4) was only 2.5 feet. We have been testing these springs under the Florida Lakewatch Program since 2005. At site #4 the spring is about 17 feet deep and normally we can see the Sechii Disc to a depth of 10 to 14 feet. Today the entire spring area was covered with a high level of algae. We think the poor conditions today may be due to very low or no flow in the Bluebird Main Spring. At a nearby site (site #2) the Sechii disc was visible on the bottom at 5 feet.

Please go to <u>www.homosassariveralliance.org</u> to find a map of Bluebird Springs with the above mentioned sites and related Lakewatch data.

This is very alarming and should be checked out by FDEP and/or SWFWMD.

Ron 352-628-6066

From:	Espy, Julie
То:	Ron Miller; Dave Dewitt; Mike Cerwinski; Doug Leeper; Al Grubman; Yerian, Art; Veronica Craw; Robert Knight; Brent Whitley
Cc:	Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin; Hicks, Richard W.
Subject:	RE: Bluebird Springs water quality
Date:	Wednesday, June 29, 2011 1:41:28 PM
Attachments:	Group5 Bluebird Spring final.pdf

Bluebird Springs has been included on the draft Verified list of Impaired Waters due to excessive algae. Please see the attached documentation that our Groundwater Protection/Springs Section provided to us in support of this assessment.

Julie Espy Environmental Administrator Watershed Assessment Section 2600 Blair Stone Rd. MS3555 Tallahassee, FL 32399 850-245-8416 julie.espy@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Herschel T. Vinyard Jr. is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on <u>this link to the DEP Customer Survey</u>. Thank you in advance for completing the survey. **From:** Ron Miller [mailto:rmille76@tampabay.rr.com]

Sent: Wednesday, June 29, 2011 12:31 PM

**To:** Dave DeWitt; Mike Cerwinski; Espy, Julie; Doug Leeper; Al Grubman; Yerian, Art; Veronica Craw; Robert Knight; Brent Whitley

**Cc:** Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin **Subject:** Bluebird Springs water quality

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Please go to <u>www.homosassariveralliance.org</u> to find a map of Bluebird Springs with the above mentioned sites and related Lakewatch data.

This is very alarming and should be checked out by FDEP and/or SWFWMD.

352-628-6066

## Bluebird Spring WBID 1348A (formerly WBID 1348)



WBID 1348A Revision for Bluebird Spring



WBID	Documention of Algae	DATA FOR SPRING VENTS				
		Spring Name	NO2 + NO3 (mg/L) Geomean	Total Samples	Samples > 0.35 mg/L	
1348		BLUEBIRD SPRINGS	0.661	3	3	
1348		HIDDEN RIVER HEAD SPRING	0.8	18	18	
1348		HIDDEN RIVER SPRING #2	0.799	21	21	
1348		HIDDEN RIVER SPRING #6	n/a	n/a	n/a	

## Bluebird Springs Discussion Points

- Bluebird Spring has elevated nitrates but lacks sufficient data for the binomial test.
- WBID 1438 was modified to create a new spring WBID for Hidden River Springs and Hidden River WBID 1348B and Bluebird Spring 1348A shown above.
- McClain Spring is not part of WBID 1348 near Bluebird Spring. Please note the corrected location of McClain Spring on the map above. McClain Spring is located near Trotter Spring Group and will be included in the modifications for the Homosassa-Trotter Group WBID 1345D.
- IWR Activity in WBID 1348: WBID Verified List for conductance; mercury (tissue)
- Bluebird Spring and run was visited and extensive algal and hydrilla problems were documented with a sketch and photographs attached to this report. One additional nitrate sample was taken for Bluebird Spring when the samplers were there to document algal problems with photographs and a sketch.
- Sampler notes for Bluebird Spring estimated width of main section of spring run is 80-90 feet across and 80 meters long (before splitting into two small canals). Algae was prevalent in the spring run with large clumps of algae along the shoreline. Spring was visited during high and low tide on the same day to confirm similar conditions.
- Recommend that Bluebird Spring WBID 1348A is placed on the Verified List for algal problems.

#### PHOTODOCUMENTATION OF BLUEBIRD SPRING AND RUN





Bluebird Spring Location 1 – Thick algae on shoreline at park entrance.



Bluebird Spring Location 2 – Thick algae clumps with aquatic vegetation.



Bluebird Spring Location 3 – Thick algae along shoreline.



Bluebird Spring Location 3 – Underwater photograph looking toward the spring run showing thick clumps of algae.



Bluebird Spring Location 3 – Underwater photograph looking toward the spring run showing thick clumps of algae and hydrilla.



Bluebird Spring Location 5 – Underwater photograph showing hydrilla and thick clumps of algae covering the stream bed in the spring run.



Bluebird Spring Location 6 – Underwater photograph showing extensive hydrilla and some algae growing around cave opening at spring vent near concrete wall.



Bluebird Spring Location 7 – Looking down the spring run near the first vent near the concrete wall - dark areas are clumps of algae.



Bluebird Spring Location 7 – Underwater photograph showing clumps of algae in spring run.


Bluebird Spring Location 8 – Underwater photograph showing clumps of algae near second vent and along shoreline but not covering stream bed. Underwater conditions were a little murky due to muddy water.

(Photo credit Laura Hester)



Bluebird Spring Location 10 – Underwater photograph showing clumps of algae and hydrilla covering stream bed in the spring run.

(Photo credit Laura Hester)



Bluebird Spring Location 10 – Showing extensive overgrowth of hydrilla visible on the surface of the spring run.

(Photo credit Laura Hester)

### **GROUND WATER DIVIDES AND FLOW DIRECTIONS**

The ground water that exits at Bluebird Spring comes from a large ground water zone southeast of the spring (blue arrows on map below). Documents indicate that Bluebird Spring probably flows toward the Homosassa River, running parallel for a short distance and then connecting with Homosassa River.



### POTENTIOMETRIC MAP SHOWING REGIONAL **GROUND WATER FLOW DIRECTIONS**



Figure 12. Potentiometric surface of the Upper Floridan aquifer, September 1997 (modified from Metz and others, 1998).

### **RESEARCH AND DATA**

TABLE 1 - GWPS table of general chemistry shown below compares Bluebird Spring, and Hidden River Springs Group to the Homosassa Springs and River.

# TABLE 1. HIDDEN RIVER, BLUEBIRD AND HOMOSASSA SPRINGSCOMPARED TO HOMOSASSA RIVER (GWPS medians)

Stations	WBID	DO	рН	Sp Cond	TDS	Nitrate+ Nitrite
OTTER CREEK	1348C	4.19	7.3	8848.5	N/A	N/A
BLUEBIRD SPRINGS	1348	2.860	7.440	1220.0	658.00	0.640
HIDDEN RIVER #2 SPRING	1348	3.410	7.590	2710.0	1373.50	0.694
HIDDEN RIVER HEAD SPRING	1348	3.923	7.625	2020.0	1032.00	0.698
HOMOSASSA RIVER	1345	6.5	7.8	484.0	206.00	0.07
HOMOSASSA SPRING #1	1345D	3.805	7.54	4200.0	2170.00	0.51
HOMOSASSA SPRING #2	1345D	3.825	7.5	6091.0	3273.00	0.497
HOMOSASSA SPRING #3	1345D	4.1	7.6	1855.0	935.50	0.537
HOMOSASSA SPRING RUN	1345D	4.68	7.5	3647.0	1930.00	0.54
HOMOSASSA UNNAMED SPRING #1	1345	N/A	7.3	3890.0	2045.00	0.411

Note: Otter Creek was only sampled once in 2008 and is tidally influenced.

TABLE 2 FROM SWFWMD - they did a similar table of springs and river data from 1992-2009. Most of these springs are under the influence of a tidal cycle and have quite a bit of variance. However, it seems that springs in the Trotter Group have lower specific conductance median values (Abdoney, Belcher, McClain, Pumphouse, Trotter #1, Trotter Main). Homosassa Springs generally have higher specific conductance than Bluebird and Hidden River Springs. Bluebird Spring general chemistry is most similar to Homosassa Spring #3.

## TABLE 2. SWFWMD HIDDEN RIVER, BLUEBIRD AND HOMOSASSASPRINGS COMPARED TO HOMOSASSA RIVER

Table 2-7. Median water quality constituent/parameter values for selected springs in the Homosassa Springs system, based on *in-situ* measurements made from March 24, 1992 through August 5, 2009 by the Southwest Florida Water Management District. Dashes indicated that data were not available.

Spring	Number of Dates Sampled (N)	Number of Samples (N)	Temperature (°C)	pH (standard units)	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm at 25 °C)
Abdoney Spring	3	3	24.3	7.80	-	496
Belcher Spring	3	3	23.1	7.77	2212	441
Bluebird Spring	3	2-5	22.9	7.85	1.9	1,202
Halls River Spring No. 1	1	1	23.7	7.60	-	6,950
Halls River Main Head Spring	19	5-28	23.2	7.69	2.3	5,135
Hidden River Spring No. 2	61	34-103	23.3	7.64	3.4	2,700
Hidden River Head Spring	60	33-100	23.3	7.69	3.8	1904
Homosassa Main Spring No. 1	60	31-110	23.4	7.58	4.0	4,089
Homosassa Main Spring No. 2	60	32-109	23.4	7.56	4.0	5,961
Homosassa Main Spring No. 3	57	29-104	23.4	7.67	4.2	1,635
Homosassa River Spring No. 1	4	4	23.7	7.30		3,890
McClain Spring	3	3	23.9	7.67	-3	533
Pumphouse Spring	33	10-46	23.0	7.65	3.7	521
Trotter Spring No. 1.	3	3	23.2	7.74	2272	451
Trotter Main Spring	62	34-103	23.4	7.71	3.8	497

Table 2-8. Estimated salinity for selected springs in the Homosassa Springs system, based on median chloride concentrations presented in Table 2-6 and the general relationship between salinity and chlorinity (salinity as parts per thousand or ppt = 1.80655 \* chlorinity as ppt) published by Wooster *et al.* (1969).

Spring	Estimated Salinity
Abdoney Spring	0.1
Belcher Spring	0.1
Bluebird Spring	0.5
Halls River Spring No. 1	3.9
Halls River Main Head Spring	3.0
Hidden River Spring No. 2	1.3
Hidden River Head Spring	0.8
Homosassa Main Spring No. 1	2.0
Homosassa Main Spring No. 2	3.1
Homosassa Main Spring No. 3	0.7
Homosassa River Spring No. 1	2.1
McClain Spring	0.1
Pumphouse Spring	0.1
Trotter Spring No. 1.	0.1
Trotter Main Spring	0.1

From:	Ron Miller
To:	Dave Dewitt: Mike Cerwinski; Julie Epsy: Doug Leeper; Al Grubman; Art Yerian; Veronica Craw; Robert Knight:
	Brent Whitley
Cc:	Priscilla Watkins; Jim Bitter: Ron Schultz: Tom Clark: Bill Garvin; Rolf Auermann; Susan Coffin
Subject:	Bluebird Springs water quality
Date:	Wednesday, June 29, 2011 12:31:19 PM

Hi all,

Today we tested Bluebird Springs. The Sechii Depth at the Main Spring (site #4) was only 2.5 feet. We have been testing these springs under the Florida Lakewatch Program since 2005. At site #4 the spring is about 17 feet deep and normally we can see the Sechii Disc to a depth of 10 to 14 feet. Today the entire spring area was covered with a high level of algae. We think the poor conditions today may be due to very low or no flow in the Bluebird Main Spring. At a nearby site (site #2) the Sechii disc was visible on the bottom at 5 feet.

Please go to <u>www.homosassariveralliance.org</u> to find a map of Bluebird Springs with the above mentioned sites and related Lakewatch data.

This is very alarming and should be checked out by FDEP and/or SWFWMD.

Ron 352-628-6066

From:	Doug Leeper
To:	Ron Miller (rmille76@tampabay.rr.com)
Cc:	<u>Czerwinski, Mike (mczerwin@tampabay.rr.com); "Julie.Espy@dep.state.fl.us"</u>
Bcc:	Marty Kelly; Dave Dewitt; Chris Zajac; Gary E. Williams; Dave Dewitt; Veronica Craw
Subject:	Bluebird Springs
Date:	Thursday, June 30, 2011 3:23:08 PM
Attachments:	Group5 Bluebird Spring final.pdf

Ron:

Thanks for your e-mails regarding Bluebird Springs. Thanks also to July Espy and Mike Czerwinski for their comments regarding proliferation of algae in the spring bowl and run. Seems that the information you and your LAKEWATCH colleagues are collecting will be of use to all who are interested in protecting the resources of the Homosassa region.

Douglas A. Leeper, Chief Environmental Scientist Resource Projects Department, Southwest Florida Water Management District 2379 Broad Street, Brooksville, FL 34604-6899 Telephone: 1-800-423-1476, ext. 4272 (FL only) or 352-796-7211, ext. 4272 Fax: 352-754-6885 E-Mail: <u>doug.leeper@watermatters.org</u> Web Site: watermatters.org

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From: Ron Miller [mailto:rmille76@tampabay.rr.com]
Sent: Wednesday, June 29, 2011 5:01 PM
To: Michael G. Czerwinski; Rolf Auermann
Cc: Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin; Dave Dewitt; Julie Epsy; Doug Leeper; Al Grubman; Art Yerian; Veronica Craw; Robert Knight; Brent Whitley
Subject: Re: Bluebird Springs water quality

Hi Mike,

Yes, we do read the water depth on a SWFWMD depth gage. Today it was slightly higher than last month: 1.67 vs 1.6 feet.

The BB readings range from 1.5 to 2.3 feet.

Rolf: would you email your file of BB data to Mike.

Thanks, Ron

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From: Michael G. Czerwinski Sent: Wednesday, June 29, 2011 1:30 PM To: <u>'Ron Miller'</u> Subject: RE: Bluebird Springs water quality Very good information, thank you for the data. You are probably correct about the flow being an important factor, To help you put your observation into context / perspective, we have observed a drop in wetland water levels of 3-4 feet at the 4 wetlands (2 "treatment" wetlands within SMW and 2 "control" wetlands within the State Forest west of US 19) we are monitoring for the Sugarmill Woods Wellfields. The water levels in these wetlands was near the seasonal high level this April in response to the end of March precipitation events. These are both the highest (April 2011) and lowest (June 24, 2011) water levels recorded since we started monitoring them in October 2009. The last time water levels were as low as this week was in June 2008 (June 2002 was Period of Record low ) and as high as this April was February 2006.

If you also take water level (depth) readings at Bluebird, you may want to compare yours to these dates and see if there is a correlation.

However, the algae bloom may more be related to other conditions including many cloudless days in May and June (high incident sunlight), nutrients, as well as flow.

Finally, do you have a POR excell file of the data you collect at Bluebird that you can share with us? WE may want to incorporate some of that into our analysis. Mike



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From: Espy, Julie [mailto:Julie.Espy@dep.state.fl.us]
Sent: Wednesday, June 29, 2011 1:41 PM
To: Ron Miller; Dave Dewitt; Mike Cerwinski; Doug Leeper; Al Grubman; Yerian, Art; Veronica Craw; Robert Knight; Brent Whitley
Cc: Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin; Hicks, Richard W.
Subject: RE: Bluebird Springs water quality

Bluebird Springs has been included on the draft Verified list of Impaired Waters due to excessive algae. Please see the attached documentation that our Groundwater Protection/Springs Section provided to us in support of this assessment.

Julie Espy Environmental Administrator Watershed Assessment Section 2600 Blair Stone Rd. MS3555 Tallahassee, FL 32399 850-245-8416 julie.espy@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Herschel T. Vinyard Jr. is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on <u>this link to the DEP Customer Survey</u>. Thank you in advance for completing the survey.

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From: Ron Miller [mailto:rmille76@tampabay.rr.com]
Sent: Wednesday, June 29, 2011 12:31 PM
To: Dave DeWitt; Mike Cerwinski; Espy, Julie; Doug Leeper; Al Grubman; Yerian, Art; Veronica Craw; Robert Knight; Brent Whitley
Cc: Priscilla Watkins; Jim Bitter; Ron Schultz; Tom Clark; Bill Garvin; Rolf Auermann; Susan Coffin
Subject: Bluebird Springs water quality

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This is very alarming and should be checked out by FDEP and/or SWFWMD.

Ron 352-628-6066