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 water use permitting, spring discharge and the Northern District Mode submitted by Mr. Ron Miller

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This memorandum documents correspondence associated with questions concerning water use permitting, spring discharge and the Northern District Model that were submitted by Mr. Ron Miller on August 22, 2011. Copies of electronic mails associated with this original submission are attached to this memorandum.

DAL
Attachments

From:	Ron Miller
To:	Doug Leeper
Subject:	Questions for the Sept 6 Workshop.
Date:	Monday, August 22, 2011 7:00:20 PM

Hi Doug,

Here are some questions for the Sept 6th Homosassa MFL Workshop. It would be helpful to have this information posted prior to the meeting.

Water Use Permits

Please provide a table and map of all of the water withdrawal permits in Citrus County similar to that provided for the Homosassa Springshed.

Homosassa Main Spring and SE Fork Flow Measurement.

1. Please provide a map showing the Weeki Wachee and the Lecanto Well sites and their relationship to the Homosassa Springshed.

2. There has been a lot of discussion about the calculations regarding the flow measurements at the Homosassa Main Spring and the Southeast Fork of the Homosassa. Obviously the accuracy and dependability of these measurements is critical to the Homosassa MFL analysis and the proposed enforcement scheme. Would you please provide your view of the deviations in question and how they might affect the accuracy and usefulness of these flow measurements.

Missing springs in the Northern District Model

There are significant springs in Citrus County that are not represented in the Northern District Model. For example the Bluebird Spring. When do you plan to incorporate these springs in the model?

Best regards,
Ron

From: Doug Leeper
To: Ron Miller (rmille76@tampabay.rr.com)
Bcc: Ron Basso; Marty Kelly
Subject: RE: Questions for the Sept 6 Workshop.
Date: Tuesday, August 23, 2011 4:14:39 PM
Attachments: image001.png
image002.png
image004.png
image005.png

Ron:

Thanks for the questions concerning water use, estimation of flows in the Homosassa River system, and the Northern District Model. Responses to your inquiries are imbedded in the body of your August 22nd e-mail below. I will plan on posting this e-mail to the workshop web site.

Douglas A. Leeper, Chief Environmental Scientist
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Fax: 352-754-6885
E-Mail: doug.leeper@watermatters.org
Web Site: watermatters.org

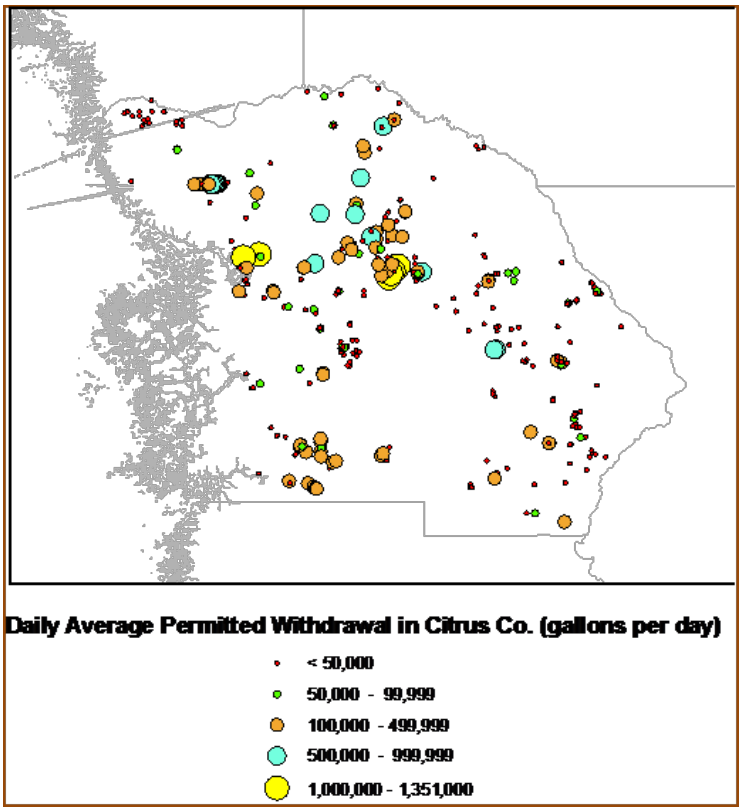
From: Ron Miller [mailto:rmille76@tampabay.rr.com]
Sent: Monday, August 22, 2011 7:01 PM
To: Doug Leeper
Subject: Questions for the Sept 6 Workshop.

Hi Doug,

Here are some questions for the Sept 6th Homosassa MFL Workshop. It would be helpful to have this information posted prior to the meeting.

Water Use Permits
Please provide a table and map of all of the water withdrawal permits in Citrus County similar to that provided for the Homosassa Springshed.

The figure below shows withdrawal and monitoring well sites (and a few associated environmental monitoring sites) included in the District's current Permitted Water Use Permit Withdrawal Point Layer (a Geographic Information System Database/File). The figure was prepared specifically for this e-mail on August 23, 2011.



The table below includes permit information associated with the points shown in the figure above. The column on the far right lists average daily permitted withdrawal amounts expressed in gallons per day.

WUP_ PERMIT	WUP_ REVISION	WITHDRAWAL ID	PERMITTEE	WITHDRAW_2	WITHDRAW_4	MONITOR__1	MONITOR__2	WATER_USE1	PERM_AVG_DAILY_GPD
199	6	15	Brooksville Quarry LLC	Capped	Withdrawal of Groundwater			MINING AND DEWATERING	0
208	14	2	G. William Wilde	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
208	14	10	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	1000
419	10	4	City Of Inverness	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	6250
419	10	5	City Of Inverness	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	6250
729	3	5	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80000
1108	4	1	Z2F Citrus & Cattle LLC	Existing	Withdrawal of Groundwater			AGRICULTURAL	25420
2842	9	10	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
2851	4	5	Seven Rivers Golf & Country Club Inc	Existing	Surface Withdrawal			RECREATION/AESTHETIC	213500
3228	7	5	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	3000
3672	1	8	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	INDUSTRIAL AND COMMERCIAL	0
3672	1	16	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	551520
4153	10	6	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	162000

4368	2	1	Citrus County School Board	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
4368	2	4	Citrus County School Board	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	18000
4368	2	5	Citrus County School Board	Existing	Withdrawal of Groundwater			AGRICULTURAL	41000
4368	2	5	Citrus County School Board	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	41000
4368	2	7	Citrus County School Board	Existing	Withdrawal of Groundwater			AGRICULTURAL	21000
4695	4	4	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	285000
4975	2	3	Van Ness Groves	Proposed	Surface Withdrawal			AGRICULTURAL	89400
5091	3	1	Toby John & Joanna Caulfeild	Existing	Withdrawal of Groundwater			AGRICULTURAL	300
6691	6	3	Gulf Highway Land Corporation	Plugged	Monitor	MONITOR WELL	AQUIFER LEVELS	PUBLIC SUPPLY	0
6691	6	4	Gulf Highway Land Corporation	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	73000
7121	5	10	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Monitor	MONITOR WELL	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
7687	7	6	Crystal River Quarries Inc	Plugged	Monitor	MONITOR WELL	AQUIFER LEVELS	AGRICULTURAL	0
7687	7	9	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	3000
7805	10	2	Hampton Hills Partnership	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	78600
7805	10	5	Hampton Hills Partnership	Capped	Monitor	MONITOR WELL	UNKNOWN AS OF CONVERSION	RECREATION/AESTHETIC	0
7805	10	12	Hampton Hills Partnership	Existing	Surface Withdrawal			RECREATION/AESTHETIC	397200
7805	10	15	Hampton Hills Partnership	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	20200
7819	9	58	Citrus Mining and Timber Inc.	Proposed	Surface Withdrawal	STAFF GAGE	NO FURTHER INFO NECESSARY	MINING AND DEWATERING	0
7819	9	61	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	MINING AND DEWATERING	0
8147	1	2	Oak Pond LLC A Florida LLC	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	500
8627	1	1	Charles D. Tuttle	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1900
8627	1	1	Charles D. Tuttle	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	1900
8747	1	3	William Hunt	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	900
8747	1	3	William Hunt	Existing	Withdrawal of Groundwater			AGRICULTURAL	900
8785	9	4	Escalante-Black Diamond Golf Club LLC	Existing	Surface Withdrawal			RECREATION/AESTHETIC	339930
8785	9	12	Escalante-Black Diamond Golf Club LLC	Existing	Monitor	STAFF GAGE	WETLAND WATER LEVEL	RECREATION/AESTHETIC	0
8834	1	1	Ronnie D. Cannon & Edsel Rowan, Trustee	Existing	Withdrawal of Groundwater			AGRICULTURAL	71900
8894	2	1	Cmc Real Estate Program 1988-1	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4600
8970	3	3	Scout Plantation Owner LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	43600
9791	7	7	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	215000
			Pine Ridge Community Golf and Country Club,		Withdrawal of				

9964	2	4	LLC	Existing	Groundwater			RECREATION/AESTHETIC	11600
10306	1	1	Timothy E and Julie E Moffitt	Existing	Withdrawal of Groundwater			AGRICULTURAL	15600
10306	1	2	Timothy E and Julie E Moffitt	Existing	Withdrawal of Groundwater			AGRICULTURAL	15600
10404	2	2	Flovicc & Company, Inc.	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	7000
10966	0	2	South Dunnellon Water Asso Inc	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	48120
11281	4	5	Metal Industries Inc Howard Loy	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	64000
11801	1	50	United State of America, US Fish & Wildlife Services	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	INDUSTRIAL AND COMMERCIAL	0
11801	1	58	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11839	6	4	Walden Woods Ltd	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	109000
11931	1	1	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	33300
12059	2	1	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Surface Withdrawal			RECREATION/AESTHETIC	4680
12059	2	3	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Proposed	Surface Withdrawal			RECREATION/AESTHETIC	9360
12059	2	4	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	28000
12506	0	1	Ellie Schiller & Fdep Office Of Greenways & Trails	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	3900
204	2	1	Evn Road LLC	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
207	6	3	City Of Crystal River	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
207	6	4	City Of Crystal River	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
208	14	13	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	46380
296	2	1	Ray A Morris	Existing	Withdrawal of Groundwater			AGRICULTURAL	11100
419	10	6	City Of Inverness	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	6250
419	10	11	City Of Inverness	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	3125
1273	4	2	Post Oak Ranch LLC	Existing	Withdrawal of Groundwater			AGRICULTURAL	1800
1345	2	4	Royal Oaks Of Citrus Hoa Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	6760
1928	6	2	Brassboys Enterprises Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	130000
2842	9	5	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	202056
2842	9	16	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	893709
3228	7	12	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	1000
3672	1	2	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	250000
			Florida Power Corp Dba		Withdrawal of			INDUSTRIAL AND	

3672	1	3	Progress	Existing	Groundwater			COMMERCIAL	250000
3672	1	5	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	551520
3672	1	15	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	551520
3673	5	3	Suntacc & Company, Inc.	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	65000
3673	5	7	Suntacc & Company, Inc.	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	191000
4153	10	7	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	325000
4153	10	8	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	575000
4368	2	2	Citrus County School Board	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	80500
4406	7	1	Homosassa Special Water District	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
4406	7	2	Homosassa Special Water District	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	90000
4406	7	3	Homosassa Special Water District	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	90000
4695	4	7	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	NO FURTHER INFO NECESSARY	INDUSTRIAL AND COMMERCIAL	0
4975	2	1	Van Ness Groves	Existing	Withdrawal of Groundwater			AGRICULTURAL	89400
6291	2	4	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
6691	6	1	Gulf Highway Land Corporation	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	38000
6691	6	5	Gulf Highway Land Corporation	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	74000
6965	3	2	Joane H Miller	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
7121	5	3	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1000000
7121	5	7	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1351000
7662	2	1	Champs Software Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	30000
7687	7	3	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	3000
7687	7	8	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	1600
7805	10	18	Hampton Hills Partnership	Existing	Surface Withdrawal			RECREATION/AESTHETIC	42400
7819	9	2	Citrus Mining and Timber Inc.	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	0
7819	9	5	Citrus Mining and Timber Inc.	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	300
8147	1	1	Oak Pond LLC A Florida LLC	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	11100
8849	1	1	Citrus Co Engineering	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	24000
8970	3	2	Scout Plantation Owner LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	38000
8997	8	1	Inverness Golf & Country Club	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
8997	8	5	Inverness Golf & Country Club	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	119000
8997	8	6	Inverness Golf & Country Club	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	120000
			Steve D & Kathie L		Withdrawal of				

9222	2	1	Atkinson	Existing	Groundwater			AGRICULTURAL	200
9329	3	1	Inergy Propane, LLC	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	1000
9574	1	1	Twisted Oaks Golf Course LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	312100
9574	1	2	Twisted Oaks Golf Course LLC	Existing	Surface Withdrawal			RECREATION/AESTHETIC	312100
9791	7	51	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	MONITOR WELL	WATER QUALITY	PUBLIC SUPPLY	0
9791	7	52	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	STAFF GAGE	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
9791	7	53	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	PIEZOMETER	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
9791	7	54	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	STAFF GAGE	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
10260	0	1	Brassboys Enterprises, Inc Dba Citrus Springs Golf & Cc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	111000
11281	4	2	Metal Industries Inc Howard Loy	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	0
11801	1	52	United State of America, US Fish & Wildlife Services	Existing	Monitor	FLOW METER	STREAM FLOW	INDUSTRIAL AND COMMERCIAL	0
11801	1	61	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11801	1	62	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	TEMPERATURE OF AIR	INDUSTRIAL AND COMMERCIAL	0
12049	1	3	Citrus Co Bocc	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	500
12059	2	2	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Surface Withdrawal			RECREATION/AESTHETIC	9360
12288	2	5	M & B Products	Existing	Surface Withdrawal			AGRICULTURAL	114223
12431	1	1	Brentwood Farms Ltd Partnership	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	16680
12565	0	2	Professional Horticultural Services	Existing	Withdrawal of Groundwater			AGRICULTURAL	2400
12876	1	3	Board Of Trustees Internal Imp & Homosassa Springs Wildlife Prk	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	300
12974	0	1	Donna Miller Trustee	Existing	Withdrawal of Groundwater			AGRICULTURAL	19700
13103	1	4	Deltona Corporation	Plugged	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
13360	0	1	Throgmartin-Henke Ranch &	Existing	Withdrawal of Groundwater			AGRICULTURAL	231500
20072	0	1	Florida Gas Transmission Company	Proposed	Surface Withdrawal			INDUSTRIAL AND COMMERCIAL	18500
199	6	16	Brooksville Quarry LLC	Capped	Withdrawal of Groundwater			MINING AND DEWATERING	0
204	2	2	Evn Road LLC	Existing	Withdrawal of Groundwater			AGRICULTURAL	38600
			City Of Crystal		Withdrawal of				

207	6	2	River	Existing	Groundwater			PUBLIC SUPPLY	1070000
208	14	6	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	30590
419	10	3	City Of Inverness	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	503333
419	10	5	City Of Inverness	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	6250
729	3	2	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
872	3	1	Inverness Village Condominium Association	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	18200
872	3	1	Inverness Village Condominium Association	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	18200
872	3	2	Inverness Village Condominium Association	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	18200
1108	4	3	Z2F Citrus & Cattle LLC	Existing	Withdrawal of Groundwater			AGRICULTURAL	73580
1118	5	2	Floral City Water Association Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	415000
1272	2	1	C and E Landholdings and Citrus LLC	Existing	Withdrawal of Groundwater			AGRICULTURAL	53720
1345	2	3	Royal Oaks Of Citrus Hoa Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	6770
2842	9	1	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	31086
2851	4	4	Seven Rivers Golf & Country Club Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	1000
3228	7	6	Citrus Hills Investment Prop Inc	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
3228	7	10	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	553400
3228	7	11	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	1000
3672	1	1	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	250000
3672	1	10	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	INDUSTRIAL AND COMMERCIAL	0
3672	1	14	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	551520
4008	4	2	David L, Holly A, James L &	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	20000
4368	2	1	Citrus County School Board	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
4368	2	3	Citrus County School Board	Existing	Withdrawal of Groundwater			AGRICULTURAL	80500
4368	2	3	Citrus County School Board	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	80500
4368	2	7	Citrus County School Board	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	21000
4853	3	2	City Of Crystal River	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4900
6291	2	3	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
7121	5	9	Citrus County & Withlacoochee Regional Water Supply Auth	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0

7687	7	1	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	25225
7687	7	1	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	25225
7687	7	5	Crystal River Quarries Inc	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
7687	7	5	Crystal River Quarries Inc	Capped	Withdrawal of Groundwater			MINING AND DEWATERING	0
7784	3	1	Citrus County Board of County Commissioners	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	20300
7805	10	9	Hampton Hills Partnership	Plugged	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
7805	10	14	Hampton Hills Partnership	Existing	Surface Withdrawal			RECREATION/AESTHETIC	60600
7819	9	53	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL		MINING AND DEWATERING	0
7819	9	59	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	MINING AND DEWATERING	0
7823	2	3	Central Florida Community College	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1000
7823	2	4	Central Florida Community College	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	3500
7823	2	5	Central Florida Community College	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
8758	2	1	Diocese Of St Petersburg	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	14000
9115	1	1	Tru Gas Of Florida, Inc.	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	1000
9574	1	3	Twisted Oaks Golf Course LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	10000
9791	7	3	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80000
9791	7	12	Citrus County Water Resources De c/o Robert Knight Director	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	260000
9791	7	55	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	PIEZOMETER	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
9791	7	59	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	PIEZOMETER	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
10192	0	1	Hollinswood Tree Nurseries	Existing	Withdrawal of Groundwater			AGRICULTURAL	98000
10404	2	1	Flovicc & Company, Inc.	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	254000
10842	0	1	Citrus Co Bocc & Dept Of Public	Existing	Withdrawal of Groundwater			AGRICULTURAL	6100
10937	0	1	Gulf To Lakes Associates Ltd	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	72800
11281	4	3	Metal Industries Inc Howard Loy	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	23000
11801	1	51	United State of America, US Fish & Wildlife Services	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	INDUSTRIAL AND COMMERCIAL	0
11839	6	3	Walden Woods Ltd	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
12049	1	5	Citrus Co Bocc	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	500
12431	1	6	Brentwood Farms Ltd Partnership	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	2380
12865	2	1	Anthony L Russ	Existing	Withdrawal of Groundwater			AGRICULTURAL	600
12974	0	2	Donna Miller Trustee	Existing	Withdrawal of Groundwater			AGRICULTURAL	19700

13103	1	2	Deltona Corporation	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	137000
13290	0	1	Citrus Co Dept Of Public Works Glenn Mccracken Pe	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	9400
20046	0	2	Pinewoods Plantation Nursery Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	300
20046	0	3	Pinewoods Plantation Nursery Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	300
191	2	1	Howard B. Banes	Existing	Withdrawal of Groundwater			AGRICULTURAL	14300
207	6	1	City Of Crystal River	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1070000
208	14	5	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	48100
208	14	11	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	99660
419	10	1	City Of Inverness	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
419	10	8	City Of Inverness	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	503333
419	10	9	City Of Inverness	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	503334
419	10	11	City Of Inverness	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	3125
729	3	4	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80000
1118	5	3	Floral City Water Association Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	30000
1345	2	1	Royal Oaks Of Citrus Hoa Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	23900
1928	6	5	Brassboys Enterprises Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	130000
2708	3	1	Citrus County Fair Association	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	2800
2842	9	3	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	777000
2842	9	15	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	505140
3467	2	1	Gibraltar Mausoleum Of Florida	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	22700
3467	2	2	Gibraltar Mausoleum Of Florida	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	22700
3672	1	12	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	INDUSTRIAL AND COMMERCIAL	0
3672	1	13	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	INDUSTRIAL AND COMMERCIAL	0
4153	10	2	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	250000
4153	10	4	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	175000
4368	2	4	Citrus County School Board	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	18000
4368	2	5	Citrus County School Board	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	41000
4368	2	7	Citrus County School Board	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	21000
4582	2	3	Thomas W. & Mary L. Harrison	Existing	Withdrawal of Groundwater			AGRICULTURAL	700
4695	4	1	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	25000
			Citrus County &						

7121	5	4	Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1000000
7662	2	2	Champs Software Inc	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
7662	2	3	Champs Software Inc	Existing	Surface Withdrawal			RECREATION/AESTHETIC	1000
7687	7	4	Crystal River Quarries Inc	Capped	Withdrawal of Groundwater			MINING AND DEWATERING	0
7805	10	3	Hampton Hills Partnership	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
7819	9	7	Citrus Mining and Timber Inc.	Existing	Surface Withdrawal			MINING AND DEWATERING	38137
7819	9	52	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL		MINING AND DEWATERING	0
7879	3	1	Citrus Co Bocc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	73200
8623	3	3	River Lodge Resort LLC	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	19532
8623	3	4	River Lodge Resort LLC	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	7980
8627	1	2	Charles D. Tuttle	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	27600
8747	1	2	William Hunt	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1000
8785	9	7	Escalante-Black Diamond Golf Club LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	1000
8785	9	9	Escalante-Black Diamond Golf Club LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4000
8785	9	10	Escalante-Black Diamond Golf Club LLC	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
8874	2	1	GTE Federal Credit Union/Stephen A Foster	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	1700
8997	8	3	Inverness Golf & Country Club	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4000
9532	2	1	Greenbriar Of Citrus Hills	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	31430
9791	7	1	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
9791	7	8	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	215000
9791	7	56	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	STAFF GAGE	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
10166	1	1	Simon Property Group LP	Existing	Surface Withdrawal			INDUSTRIAL AND COMMERCIAL	8500
10370	1	1	Beverly Hills Memorial Gardens, Inc. ATTN: SCI Management, LP	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	47600
10404	2	3	Flovicc & Company, Inc.	Existing	Surface Withdrawal			RECREATION/AESTHETIC	254000
10544	2	2	Ruth B. Hooper	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
11281	4	1	Metal Industries Inc Howard Loy	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	23000
11281	4	4	Metal Industries Inc Howard Loy	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	90000
11746	0	1	Citrus Co Bocc	Existing	Withdrawal of Groundwater			AGRICULTURAL	13500
11801	1	56	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0

12049	1	2	Citrus Co Bocc	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	500
12049	1	4	Citrus Co Bocc	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	500
12058	1	1	Crystal River Quarries Inc	Existing	Surface Withdrawal			MINING AND DEWATERING	55300
12059	2	53	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	RECREATION/AESTHETIC	0
12431	1	3	Brentwood Farms Ltd Partnership	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	16240
12431	1	5	Brentwood Farms Ltd Partnership	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	29860
12506	0	25	Ellie Schiller & Fdep Office Of Greenways & Trails	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	PUBLIC SUPPLY	0
12876	1	1	Board Of Trustees Internal Imp & Homosassa Springs Wildlife Prk	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	11900
13290	0	1	Citrus Co Dept Of Public Works Glenn Mccracken Pe	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	9400
199	6	13	Brooksville Quarry LLC	Dismantled	Surface Withdrawal			MINING AND DEWATERING	0
207	6	6	City Of Crystal River	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	19200
208	14	9	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	1200
208	14	12	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	21850
419	10	2	City Of Inverness	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
419	10	6	City Of Inverness	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	6250
729	3	1	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
729	3	3	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
1273	4	1	Post Oak Ranch LLC	Existing	Withdrawal of Groundwater			AGRICULTURAL	59700
1345	2	5	Royal Oaks Of Citrus Hoa Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	6770
2842	9	4	Citrus County Water Resources De c/o Robert Knight Director	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
2842	9	17	Citrus County Water Resources De c/o Robert Knight Director	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	559539
3673	5	4	Suntacc & Company, Inc.	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	200000
4153	10	1	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	275000
4153	10	9	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	358000
4406	7	4	Homosassa Special Water District	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
4406	7	5	Homosassa Special Water District	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	390000
4695	4	2	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	25000
			Constate		Withdrawal of				

4753	3	3	Utilities Inc	Existing	Groundwater			PUBLIC SUPPLY	81200
4853	3	1	City Of Crystal River	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	9700
6291	2	1	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	52000
6291	2	1	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	52000
6291	2	2	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	52000
6798	2	4	Gerrits Citrus Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	264052
6965	3	3	Joane H Miller	Existing	Withdrawal of Groundwater			AGRICULTURAL	64100
7121	5	2	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	285000
7352	1	1	Kelly Gardiner	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	2600
7662	2	1	Champs Software Inc	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	30000
7662	2	3	Champs Software Inc	Existing	Surface Withdrawal			INDUSTRIAL AND COMMERCIAL	1000
7687	7	3	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	3000
7687	7	9	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	3000
7805	10	6	Hampton Hills Partnership	Capped	Monitor	MONITOR WELL	UNKNOWN AS OF CONVERSION	RECREATION/AESTHETIC	0
7805	10	8	Hampton Hills Partnership	Plugged	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
7819	9	1	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL		MINING AND DEWATERING	0
7819	9	60	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	MINING AND DEWATERING	0
7823	2	2	Central Florida Community College	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	7300
8747	1	1	William Hunt	Existing	Withdrawal of Groundwater			AGRICULTURAL	1000
8747	1	1	William Hunt	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1000
8785	9	11	Escalante-Black Diamond Golf Club LLC	Proposed	Alternative Use			RECREATION/AESTHETIC	200000
8970	3	4	Scout Plantation Owner LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	43600
8997	8	4	Inverness Golf & Country Club	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	3000
8997	8	7	Inverness Golf & Country Club	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4000
9791	7	4	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80000
9791	7	57	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	PIEZOMETER	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
9791	7	58	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	STAFF GAGE	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
			Pine Ridge Community Golf and Country Club,		Withdrawal of				

9964	2	1	LLC	Existing	Groundwater			RECREATION/AESTHETIC	132800
9964	2	2	Pine Ridge Community Golf and Country Club, LLC	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
10192	0	2	Hollinswood Tree Nurseries	Existing	Withdrawal of Groundwater			AGRICULTURAL	98000
10260	0	2	Brassboys Enterprises, Inc Dba Citrus Springs Golf & Cc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	111000
11801	1	55	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11801	1	59	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11839	6	6	Walden Woods Ltd	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	108900
12049	1	1	Citrus Co Bocc	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	500
12058	1	3	Crystal River Quarries Inc	Plugged	Withdrawal of Groundwater			MINING AND DEWATERING	0
12059	2	52	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	RECREATION/AESTHETIC	0
12149	1	2	Donna G Miller, Trustee	Existing	Withdrawal of Groundwater			AGRICULTURAL	0
12149	1	4	Donna G Miller, Trustee	Existing	Withdrawal of Groundwater			AGRICULTURAL	11100
12288	2	4	M & B Products	Existing	Withdrawal of Groundwater			AGRICULTURAL	19368
12390	0	1	Greenbrier Two Condominium Owners Assoc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	26900
12431	1	2	Brentwood Farms Ltd Partnership	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	16240
12633	0	1	Randy & Sara Wirkus	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	67100
12901	0	2	William M & Rhonda J Scheiterle Ii	Existing	Withdrawal of Groundwater			AGRICULTURAL	200
206	2	2	Robert E. Scott-Etal (Bar S.F. Ranch)	Proposed	Surface Withdrawal			AGRICULTURAL	300
207	6	5	City Of Crystal River	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	700
208	14	1	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	1000
419	10	2	City Of Inverness	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
419	10	10	City Of Inverness	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	3125
419	10	10	City Of Inverness	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	3125
872	3	2	Inverness Village Condominium Association	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	18200
1118	5	7	Floral City Water Association Inc	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
1267	3	1	Estate Of Clinton E Marsh James E Marsh-Personal Rep	Existing	Withdrawal of Groundwater			AGRICULTURAL	30800
2226	3	1	Edwin O'Neal	Existing	Withdrawal of Groundwater			AGRICULTURAL	27300
3228	7	1	Citrus Hills Investment Prop Inc	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
3228	7	3	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	303000

3672	1	7	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	551520
3673	5	18	Suntacc & Company, Inc.	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	200000
4153	10	5	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	30000
4368	2	2	Citrus County School Board	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80500
4368	2	4	Citrus County School Board	Existing	Withdrawal of Groundwater			AGRICULTURAL	18000
4368	2	6	Citrus County School Board	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	500
4368	2	6	Citrus County School Board	Existing	Withdrawal of Groundwater			AGRICULTURAL	500
4406	7	6	Homosassa Special Water District	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	390000
4582	2	2	Thomas W. & Mary L. Harrison	Existing	Withdrawal of Groundwater			AGRICULTURAL	900
4695	4	3	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	380000
4695	4	5	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	285000
4975	2	2	Van Ness Groves	Proposed	Surface Withdrawal			AGRICULTURAL	89400
6291	2	2	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	52000
6291	2	4	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
6965	3	1	Joane H Miller	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
7121	5	1	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	285000
7121	5	5	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1000000
7121	5	6	Citrus County & Withlacoochee Regional Water Supply Auth	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	1351000
7687	7	4	Crystal River Quarries Inc	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
7805	10	10	Hampton Hills Partnership	Plugged	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
7805	10	17	Hampton Hills Partnership	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	42400
7819	9	62	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	MINING AND DEWATERING	0
7826	1	3	Citrus County Utilities Division	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	38400
8562	2	1	Gulf To Lakes Associates Limited	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	36100
8627	1	2	Charles D. Tuttle	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	27600
8747	1	2	William Hunt	Existing	Withdrawal of Groundwater			AGRICULTURAL	1000
8785	9	5	Escalante-Black Diamond Golf Club LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	11634
9097	2	1	Tarawood Utlities LLC	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	49800
			Ralph		Withdrawal of				

9370	1	1	Windham Jr	Existing	Groundwater			AGRICULTURAL	1200
9791	7	5	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	200000
9791	7	6	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	200000
10247	0	1	Citrus Co Engineering	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	1000
10370	1	2	Beverly Hills Memorial Gardens, Inc. ATTN: SCI Management, LP	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
11746	0	3	Citrus Co Bocc	Existing	Withdrawal of Groundwater			AGRICULTURAL	500
11801	1	57	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11801	1	60	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11839	6	2	Walden Woods Ltd	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
12058	1	50	Crystal River Quarries Inc	Existing	Monitor	STAFF GAGE	MINE PIT WATER LEVEL	MINING AND DEWATERING	0
12059	2	6	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Proposed	Surface Withdrawal			RECREATION/AESTHETIC	2300
12059	2	50	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	RECREATION/AESTHETIC	0
12288	2	3	M & B Products	Existing	Withdrawal of Groundwater			AGRICULTURAL	19369
12431	1	4	Brentwood Farms Ltd Partnership	Existing	Surface Withdrawal			PUBLIC SUPPLY	2380
12506	0	27	Ellie Schiller & Fdep Office Of Greenways & Trails	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	PUBLIC SUPPLY	0
12876	1	2	Board Of Trustees Internal Imp & Homosassa Springs Wildlife Prk	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	400
12901	0	1	William M & Rhonda J Scheiterle Ii	Existing	Withdrawal of Groundwater			AGRICULTURAL	19000
13103	1	1	Deltona Corporation	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	137000
13103	1	3	Deltona Corporation	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	5000
13252	0	1	David Tomczak	Existing	Withdrawal of Groundwater			AGRICULTURAL	18400
355	2	1	L Norman And Linda L Adams	Existing	Withdrawal of Groundwater			AGRICULTURAL	22600
419	10	3	City Of Inverness	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	503333
419	10	4	City Of Inverness	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	6250
1118	5	1	Floral City Water Association Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	100000
1118	5	5	Floral City Water Association Inc	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
1345	2	2	Royal Oaks Of Citrus Hoa Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	23800
			Seven Rivers Golf & Country		Withdrawal of				

2851	4	1	Club Inc	Existing	Groundwater			RECREATION/AESTHETIC	212500
3228	7	4	Citrus Hills Investment Prop Inc	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
3228	7	8	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	303000
3672	1	6	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	551520
4368	2	2	Citrus County School Board	Existing	Withdrawal of Groundwater			AGRICULTURAL	80500
4368	2	3	Citrus County School Board	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80500
4368	2	6	Citrus County School Board	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	500
4582	2	1	Thomas W. & Mary L. Harrison	Existing	Withdrawal of Groundwater			AGRICULTURAL	30200
4753	3	2	Constate Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	81200
6291	2	3	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
6798	2	2	Gerrits Citrus Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	88188
7662	2	2	Champs Software Inc	Capped	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	0
7687	7	2	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	25225
7687	7	2	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			MINING AND DEWATERING	25225
7687	7	7	Crystal River Quarries Inc	Plugged	Withdrawal of Groundwater			AGRICULTURAL	0
7805	10	7	Hampton Hills Partnership	Capped	Monitor	MONITOR WELL	UNKNOWN AS OF CONVERSION	RECREATION/AESTHETIC	0
7805	10	13	Hampton Hills Partnership	Existing	Surface Withdrawal			RECREATION/AESTHETIC	13900
7805	10	16	Hampton Hills Partnership	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	192900
7805	10	19	Hampton Hills Partnership	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	245000
7819	9	3	Citrus Mining and Timber Inc.	Existing	Surface Withdrawal			MINING AND DEWATERING	38137
7819	9	6	Citrus Mining and Timber Inc.	Capped	Withdrawal of Groundwater			MINING AND DEWATERING	0
7819	9	57	Citrus Mining and Timber Inc.	Existing	Monitor	STAFF GAGE	UNKNOWN AS OF CONVERSION	MINING AND DEWATERING	0
7823	2	1	Central Florida Community College	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	7300
7879	3	2	Citrus Co Bocc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	73200
8623	3	1	River Lodge Resort LLC	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	19533
8623	3	2	River Lodge Resort LLC	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
8785	9	2	Escalante-Black Diamond Golf Club LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	40123
8785	9	3	Escalante-Black Diamond Golf Club LLC	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
8785	9	6	Escalante-Black Diamond Golf Club LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	40123
8785	9	13	Escalante-Black Diamond Golf Club LLC	Existing	Monitor	STAFF GAGE	WETLAND WATER LEVEL	RECREATION/AESTHETIC	0
8874	2	1	GTE Federal Credit Union/Stephen A Foster	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	1700
8970	3	1	Scout Plantation Owner LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	30300
8970	3	7	Scout Plantation Owner LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	100

9204	2	1	George W & Sheila A Sikes	Existing	Withdrawal of Groundwater			AGRICULTURAL	4800
9791	7	10	Citrus County Water Resources De c/o Robert Knight Director	Proposed	Withdrawal of Groundwater			PUBLIC SUPPLY	259000
9791	7	11	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	260000
9964	2	3	Pine Ridge Community Golf and Country Club, LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	79200
10260	0	3	Brassboys Enterprises, Inc Dba Citrus Springs Golf & Cc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	111000
10306	1	3	Timothy E and Julie E Moffitt	Existing	Withdrawal of Groundwater			AGRICULTURAL	6600
10544	2	1	Ruth B. Hooper	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4600
11801	1	1	United State of America, US Fish & Wildlife Services	Proposed	Surface Withdrawal			INDUSTRIAL AND COMMERCIAL	224000
12059	2	5	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Proposed	Surface Withdrawal			RECREATION/AESTHETIC	2300
12288	2	2	M & B Products	Existing	Withdrawal of Groundwater			AGRICULTURAL	458540
12506	0	1	Ellie Schiller & Fdep Office Of Greenways & Trails	Proposed	Withdrawal of Groundwater			RECREATION/AESTHETIC	3900
12506	0	26	Ellie Schiller & Fdep Office Of Greenways & Trails	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	PUBLIC SUPPLY	0
12565	0	3	Professional Horticultural Services	Existing	Withdrawal of Groundwater			AGRICULTURAL	300
20046	0	1	Pinewoods Plantation Nursery Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	122560
199	6	14	Brooksville Quarry LLC	Capped	Withdrawal of Groundwater			MINING AND DEWATERING	0
206	2	1	Robert E. Scott-Etal (Bar S.F. Ranch)	Existing	Withdrawal of Groundwater			AGRICULTURAL	20800
208	14	3	G. William Wilde	Existing	Withdrawal of Groundwater			AGRICULTURAL	48100
419	10	1	City Of Inverness	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
419	10	8	City Of Inverness	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	503333
419	10	9	City Of Inverness	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	503334
1118	5	4	Floral City Water Association Inc	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
1118	5	6	Floral City Water Association Inc	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
1928	6	4	Brassboys Enterprises Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	3000
2842	9	2	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	23314
2842	9	6	Citrus County Water Resources De c/o Robert Knight Director	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
			Citrus County Water						

2842	9	13	Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	660567
3228	7	2	Citrus Hills Investment Prop Inc	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	55500
3672	1	4	Florida Power Corp Dba Progress	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	250000
3672	1	9	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	INDUSTRIAL AND COMMERCIAL	0
3672	1	11	Florida Power Corp Dba Progress	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	INDUSTRIAL AND COMMERCIAL	0
4008	4	1	David L, Holly A, James L &	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	20000
4153	10	10	Rolling Oaks Utilities Inc	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	350000
4368	2	1	Citrus County School Board	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
4753	3	1	Constate Utilities Inc	Capped	Withdrawal of Groundwater			PUBLIC SUPPLY	0
6691	6	2	Gulf Highway Land Corporation	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	38000
6971	2	1	John W & Margaret R White	Existing	Withdrawal of Groundwater			AGRICULTURAL	30900
7295	1	1	Citrus County Utilities Division	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	5000
7295	1	2	Citrus County Utilities Division	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	22000
7687	7	6	Crystal River Quarries Inc	Plugged	Monitor	MONITOR WELL	AQUIFER LEVELS	MINING AND DEWATERING	0
7687	7	7	Crystal River Quarries Inc	Plugged	Withdrawal of Groundwater			MINING AND DEWATERING	0
7687	7	8	Crystal River Quarries Inc	Existing	Withdrawal of Groundwater			AGRICULTURAL	1600
7784	3	2	Citrus County Board of County Commissioners	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	20200
7805	10	1	Hampton Hills Partnership	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	178500
7805	10	11	Hampton Hills Partnership	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	471700
7819	9	50	Citrus Mining and Timber Inc.	Existing	Monitor	MONITOR WELL		MINING AND DEWATERING	0
8785	9	1	Escalante-Black Diamond Golf Club LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	410658
8785	9	8	Escalante-Black Diamond Golf Club LLC	Existing	Surface Withdrawal			RECREATION/AESTHETIC	121270
8849	1	2	Citrus Co Engineering	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
8970	3	5	Scout Plantation Owner LLC	Existing	Surface Withdrawal			RECREATION/AESTHETIC	270000
8970	3	6	Scout Plantation Owner LLC	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	18000
8970	3	8	Scout Plantation Owner LLC	Capped	Withdrawal of Groundwater			RECREATION/AESTHETIC	0
8997	8	2	Inverness Golf & Country Club	Existing	Withdrawal of Groundwater			RECREATION/AESTHETIC	4000
9097	2	2	Tarawood Utlities LLC	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	49800
9532	2	2	Greenbriar Of Citrus Hills	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	31430
9791	7	2	Citrus County Water Resources De c/o Robert Knight Director	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	80000
			Citrus County Water Resources De c/o Robert		Withdrawal of				

9791	7	9	Knight Director	Existing	Groundwater			PUBLIC SUPPLY	215000
9791	7	50	Citrus County Water Resources De c/o Robert Knight Director	Existing	Monitor	MONITOR WELL	WETLAND WATER LEVEL	PUBLIC SUPPLY	0
10621	0	1	Snell A. Mills, Jr.	Proposed	Surface Withdrawal			AGRICULTURAL	23800
10842	0	1	Citrus Co Bocc & Dept Of Public	Existing	Withdrawal of Groundwater			INDUSTRIAL AND COMMERCIAL	6100
10966	0	1	South Dunnellon Water Asso Inc	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	48120
11746	0	2	Citrus Co Bocc	Capped	Withdrawal of Groundwater			AGRICULTURAL	0
11801	1	53	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11801	1	54	United State of America, US Fish & Wildlife Services	Existing	Monitor	ENVIRONMENTAL MONITOR SITE	WATER QUALITY	INDUSTRIAL AND COMMERCIAL	0
11839	6	1	Walden Woods Ltd	Plugged	Withdrawal of Groundwater			PUBLIC SUPPLY	0
12058	1	4	Crystal River Quarries Inc	Existing	Surface Withdrawal			MINING AND DEWATERING	12000
12059	2	51	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	RECREATION/AESTHETIC	0
12059	2	54	Moorings At Point O Woods Hoa & Gary F Queen Trstee-Trst 031997	Existing	Monitor	STAFF GAGE	LAKE WATER LEVEL	RECREATION/AESTHETIC	0
12149	1	1	Donna G Miller, Trustee	Existing	Withdrawal of Groundwater			AGRICULTURAL	0
12506	0	25	Ellie Schiller & Fdep Office Of Greenways & Trails	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	RECREATION/AESTHETIC	0
12506	0	26	Ellie Schiller & Fdep Office Of Greenways & Trails	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	RECREATION/AESTHETIC	0
12506	0	27	Ellie Schiller & Fdep Office Of Greenways & Trails	Existing	Monitor	MONITOR WELL	AQUIFER LEVELS	RECREATION/AESTHETIC	0
12565	0	1	Professional Horticultural Services	Existing	Withdrawal of Groundwater			AGRICULTURAL	383000
12865	2	2	Anthony L Russ	Existing	Withdrawal of Groundwater			AGRICULTURAL	22700
12865	2	3	Anthony L Russ	Existing	Withdrawal of Groundwater			AGRICULTURAL	55100
13122	0	1	Christ Way Fellowship	Existing	Withdrawal of Groundwater			PUBLIC SUPPLY	120
13136	0	1	Brian Busby	Existing	Withdrawal of Groundwater			AGRICULTURAL	22700

Homosassa Main Spring and SE Fork Flow Measurement.

1. Please provide a map showing the Weeki Wachee and the Lecanto Well sites and their relationship to the Homosassa Springshed.

The figure below, which was prepared for potential inclusion in a revised report on proposed minimum flows for the Homosassa River system, that shows the approximate boundary of the Homosassa system springshed.

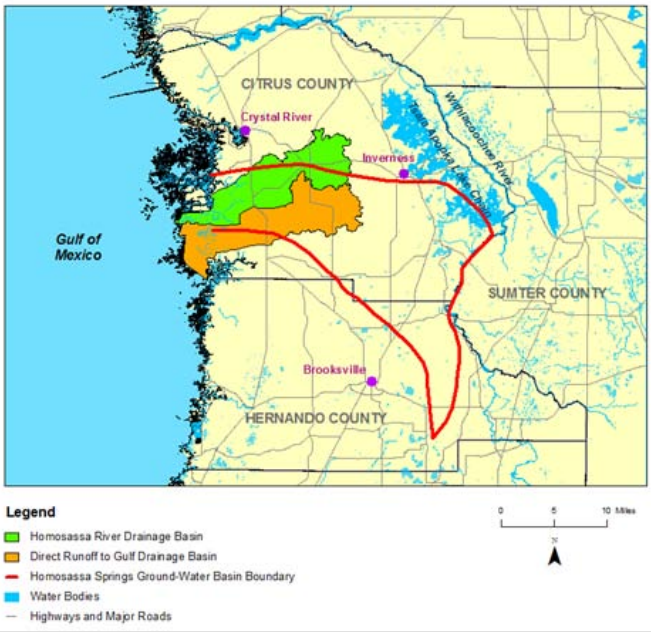


Figure 2-6. Homosassa River and Direct Runoff to Gulf drainage basins as delineated by the United States Geological Survey (Florida Department of Environmental Protection 2004a) and approximate location of the Homosassa Springs ground-water basin boundary as adapted from Knochenmus and Yobbi (2001). The Homosassa, Southeast Fork of the Homosassa and Halls rivers lie within the Homosassa River Drainage Basin. Hidden River is located in the Direct Runoff to Gulf drainage basin.

Here's a figure prepared for potential inclusion in a revised report on proposed minimum flows for the Homosassa River system, that shows the locations of the United States Geological Survey's Weeki Wachee well. The Homosassa Well 3 location is also depicted in the figure.

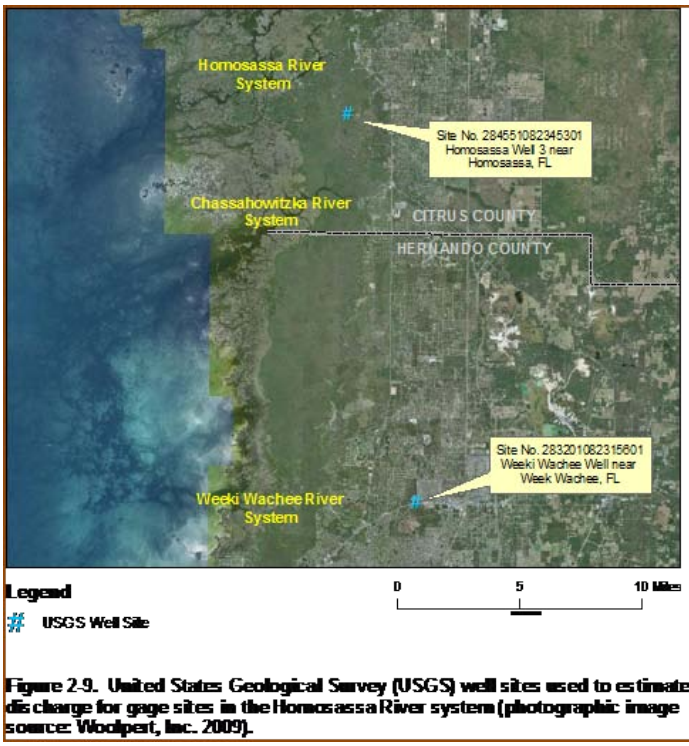


Figure 2-9. United States Geological Survey (USGS) well sites used to estimate discharge for gage sites in the Homosassa River system (photographic image source: Woolpert, Inc. 2009).

Here's a figure from a 2010 technical memorandum prepared by Ron Basso, that shows the location of the Lecanto 2 Upper Floridan Aquifer Well.

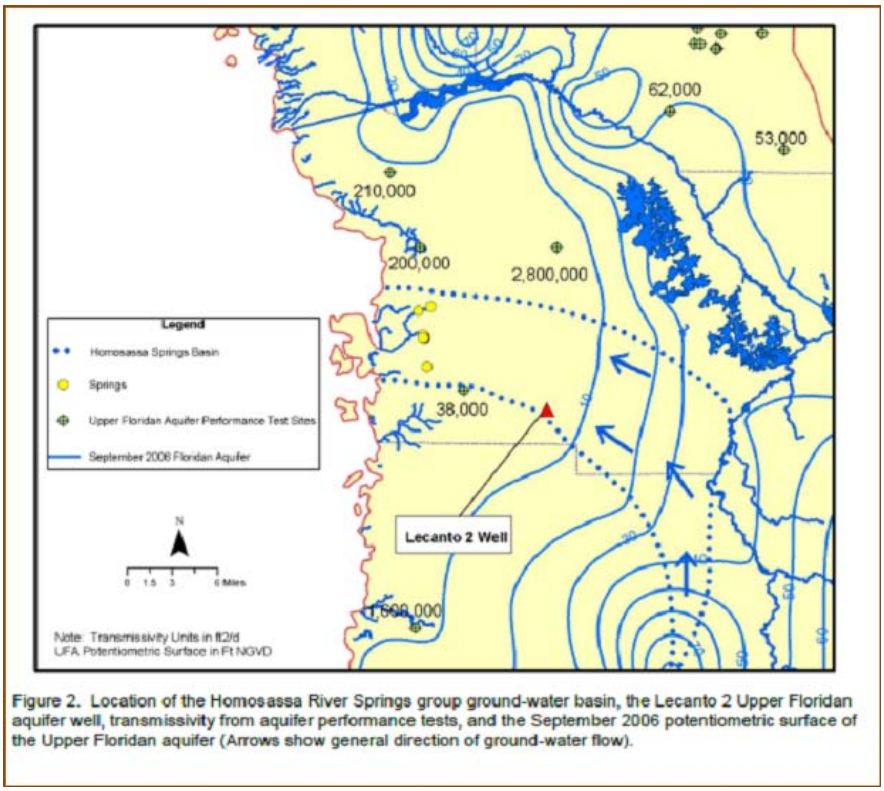


Figure 2. Location of the Homosassa River Springs group ground-water basin, the Lecanto 2 Upper Floridan aquifer well, transmissivity from aquifer performance tests, and the September 2006 potentiometric surface of the Upper Floridan aquifer (Arrows show general direction of ground-water flow).

2. There has been a lot of discussion about the calculations regarding the flow measurements at the Homosassa Main Spring and the Southeast Fork of the Homosassa. Obviously the accuracy and dependability of these measurements is critical to the Homosassa MFL analysis and the proposed enforcement scheme. Would you please provide your view of the deviations in question and how they might affect the accuracy and usefulness of these flow measurements.

The District has confidence in the discharge data for the Homosassa River system that are collected and maintained by the United States Geological Survey. These data are useful for evaluating current and historical flows within the river system, for use in the development and application of models used for minimum flows and levels development, for water-use planning and for other water management and scientific activities.

Missing springs in the Northern District Model

There are significant springs in Citrus County that are not represented in the Northern District Model. For example the Bluebird Spring. When do you plan to incorporate these springs in the model?

The District does not necessarily plan to include Bluebird Springs and many of the other springs not currently within the model in future versions of the Northern District Model. We assume that responses of these spring to withdrawals will be similar to those modeled for nearby springs that are included in the model.

Best regards,
Ron

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 minimum flows and waterfowl in the Chassahowitzka National Wildlife Refuge from Mr. Dennis Dutcher

---

This memorandum documents correspondence associated with minimum flows and waterfowl in the Chassahowitzka National Wildlife Refuge that was submitted by Mr. Dennis Dutcher on September 8, 2011. Copies of electronic mails associated with this original submission are attached to this memorandum.

DAL
Attachments

From: Dennis3ds@aol.com
To: Doug Leeper
Cc: Dennis3ds@aol.com
Subject: Waterfowl Population Trends
Date: Thursday, September 08, 2011 6:08:36 AM

Mr. Leeper,

The evidence as to why migratory waterfowl is not utilizing the Chassahowitzka NWR, and the Springs Coast Region of the Eastern Gulf of Mexico appears to point to the disappearance of consistent fresh water flowing and seeping into the coastal region that creates the perfect brackish and freshwater mix, required to produce habitat that waterfowl utilize; exacerbated as we now understand by sea level rise. Your contention that production of waterfowl is a contributing factor cannot be substantiated, even if waterfowl numbers were down there would still be waterfowl utilizing healthy habitat albeit in lesser numbers. As you heard from the staff at the Chassahowitzka NWR the habitat has been in decline for some time and has gone unrecognized until recently pointed out by stakeholders. I made the point in my letter to The District that the decline of the ducks utilizing the area had followed the opposite trend line as permits were approved by The District for ground water withdrawals from the Region. Almost exactly as the pumping increased the over wintering waterfowl numbers on the refuge went down, suggesting that there is some correlation between the local waterfowl habitat and a fully saturated aquifer.

For your own edification and information I recommend for your review **USFWS Administrative Report dated July 1, 2011. *"Trends in Duck Breeding Populations, 1955-2011"***

http://www.fws.gov/migratorybirds/NewReportsPublications/2011Trends%20in%20Breeding%20Duck%20Populations.pdf

This is not a long document only 26 pages, on page 1 you will find the numbers and Long Term Averages (LTA) for the various species of hunted waterfowl.

A steep decline in waterfowl over wintering at Chassahowitzka NWR and the Springs Coast Region does not appear to be an isolated issue in Florida. Gulf Island National Sea Shore seems to have a similar issue as Perdido Bay's salinity levels have increased, Ten Thousand Island NWR has had a decline in the number of waterfowl that stay on the refuge and also Merritt Island NWR which in the past has been a top 10 waterfowling destination has experienced declines and would likely be in worse condition if not for the mosquito control impoundments creating man made habitat and the manipulated impoundment at Black Point within Merritt Island NWR. The presents of waterfowl are an indicator of the overall health of an ecosystem, with that said it is easy to conclude that there have been significant changes in the coastal wetlands of Florida and in particular the Springs Coast.

Warmest Regards,

Dennis

Dennis D. Dutcher
United Waterfowlers - Florida, Inc.
South West Region Director / Board Member
863.667.1833 / 863.602.0113
www.uw-f.org

From: Doug Leeper
To: "Dennis3ds@aol.com"
Cc: Marty Kelly; Mike Heyl
Subject: RE: Waterfowl Population Trends
Date: Thursday, September 08, 2011 8:02:00 AM

Dennis,

Thanks for the comments and the link to the waterfowl/habitat report by Zimpfer and others. I have looked at the report and found it to be useful.

Again, I appreciate your contributing to the Springs Coast minimum flows workshops and taking the time to offer information on waterfowl abundances on the Springs Coast and elsewhere in Florida.

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: Dennis3ds@aol.com [mailto:Dennis3ds@aol.com]
Sent: Thursday, September 08, 2011 6:08 AM
To: Doug Leeper
Cc: Dennis3ds@aol.com
Subject: Waterfowl Population Trends

Mr. Leeper,

The evidence as to why migratory waterfowl is not utilizing the Chassahowitzka NWR, and the Springs Coast Region of the Eastern Gulf of Mexico appears to point to the disappearance of consistent fresh water flowing and seeping into the coastal region that creates the perfect brackish and freshwater mix, required to produce habitat that waterfowl utilize; exacerbated as we now understand by sea level rise. Your contention that production of waterfowl is a contributing factor cannot be substantiated, even if waterfowl numbers were down there would still be waterfowl utilizing healthy habitat albeit in lesser numbers. As you heard from the staff at the Chassahowitzka NWR the habitat has been in decline for some time and has gone unrecognized until recently pointed out by stakeholders. I made the point in my letter to The District that the decline of the ducks utilizing the area had followed the opposite trend line as permits were approved by The District for ground water withdrawals from the Region. Almost exactly as the pumping increased the over wintering waterfowl numbers on the refuge went down, suggesting that there is some correlation between the local waterfowl habitat and a fully saturated aquifer.

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http://www.fws.gov/migratorybirds/NewReportsPublications/2011Trends%20in%20Breeding%20Duck%20Populations.pdf

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Warmest Regards,

Dennis

Dennis D. Dutcher
United Waterfowlers - Florida, Inc.
South West Region Director / Board Member
863.667.1833 / 863.602.0113
www.uw-f.org

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 mussels in the Chassahowitzka River system by Mr. Nathan Johnson

---

This memorandum documents correspondence associated mussels in the Chassahowitzka River and minimum flows for the Chassahowitzka and Homosasssa River systems that was copied to District staff by Mr. Nathan Johnson on September 6, 2011. A copy of Mr. Johnson's original electronic mail is attached to this memorandum.

DAL
Attachment: E-mail (with e-mail string)

From:	Nate Johnson on behalf of Nathan Johnson
To:	Cathy A Beck; Doug Leeper; Mike Heyl
Cc:	Rob Robins; Hope
Subject:	Re: Mussels in the Chassahowitzka
Date:	Tuesday, September 06, 2011 5:44:04 PM

All -

To my knowledge, no molluscs or fishes in the Chassahowitzka are listed at any level (state or federal) but I will offer the following information:

A UF student (Matt Lauretta - student of Tom Fraser in Fisheries Dept.) recently completed a study quantifying biomass of macroinvertebrates and fishes in both the Chassahowitzka and Homosassa rivers. It shows that nutrient levels impact fish population abundances and reduced flows will certainly influence nutrient levels in the Chassahowitzka. The final report has been submitted to FL-SWG program so FL-FWC should have the data. Hopefully someone is using these data to model ecosystem responses to anticipated changes in TMDLs and MFLs.

Hope this helps save the Chassahowitzka!

- Nate

On Sep 6, 2011, at 4:53 PM, Cathy A Beck wrote:

>
>
>
> Hi Nate and Rob,
> It seems we each have corresponded with Hope Corona regarding the new
> minimum flow standard being set for the Chassahowitzka. I spoke with her
> this morning regarding, among other things, your helpful identifications of
> the mussels and fish that she collected. She has forwarded your email
> correspondence with her to me. Nate, you have very eloquently explained
> our role as USGS scientists, and the WMD's requirement for the "best
> available data" to use in their decision-making.
>
> Manatees do use the upper Chassahowitzka as a warm water refuge during
> winter, but not in high numbers, and I believe the WMD has determined that
> the 11% flow reduction will not impact these manatees. (I doubt that is
> true, but the Chassahowitzka is not one of our primary study sites, so I
> have no hard data to support that, only observation and 32+ years of
> experience!) I am not aware if any of the fish or invertebrates identified
> from this system are listed species. (The Florida Areas Natural Inventory
> does not include any mollusc or fish species, excepting the Gulf Sturgeon.)
> Am I correct that the molluscs and fish you identified are not federally or
> state listed species - endangered, threatened, or species of special
> concern?
>
> If you have any information that you think might be helpful to the SWFWMD
> to base their decision on the best available data, please forward it to the
> two SWFWMD staff listed below. It seems that the best strategy is to
> provide any information we have straight from the source, rather than
> through Hope or other local residents.
>
> Thanks in advance, Cathy
>
> Doug.Leeper@swfwmd.state.fl.us,

>
> Mike.Heyl@swfwmd.state.fl.us
>
> ~~~~~~
> Cathy A. Beck, Wildlife Biologist
> U.S. Geological Survey
> Southeast Ecological Science Center
> Sirenia Project
> 2201 NW 40th Terrace
> Gainesville, FL 32605-3574 USA
> cbeck@usgs.gov
> http://fl.biology.usgs.gov/Manatees/manatees.html
> Voice: 352-264-3550 (direct)
> 352-378-8181 or 372-2571 (operator)
> Fax: 352-374-8080
> ~~~~~~
>
>
>
> ----- Forwarded by Cathy A Beck/BRD/USGS/DOI on 09/06/2011 04:00 PM -----
> |------------>
> | From: |
> |------------>
>> ---
----------------------|
> |"Hope"
<hopecorona@tampabay.rr.com>
|
>> ---
----------------------|
> |------------>
> | To: |
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>
|<cbeck@usgs.gov>
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> | Date: |
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> |09/06/2011 02:47
PM |
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> | Subject: |
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> |Nate Johnson's original reply Fw: Elliptio host: Fw: GSFGWNR3 Elliptio Host
Question |
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>
> ----- Original Message -----
> From: Hope
> To: Carolyn.Voyles@dep.state.fl.us
> Sent: Saturday, June 18, 2011 10:32 AM
> Subject: Fw: Elliptio host: Fw: GSFGWNR3 Elliptio Host Question
>
>
> ----- Original Message -----
> From: Nathan Johnson
> To: Hope
> Sent: Thursday, January 06, 2011 3:45 PM
> Subject: Re: Elliptio host: Fw: GSFGWNR3 Elliptio Host Question
>
> Dear Hope -
>
> Water withdraw can clearly have negative impacts on aquatic organisms -
> very few will disagree. The problem is quantifying the amount of water a
> particular organism needs. As a researcher, developing models to answer
> this question are on top of my list but will take some time.
> Unfortunately, federal agencies have little leverage against states with
> regards to controlling quantities of water. The EPA regulates water
> quality, which is linked to quantity (dilution of pollution) but the main
> regulatory agency in charge of FL's water is the DEP and WMD. USFWS has a
> roll but only where species afforded protection under the ESA are involved.
> To my knowledge, no aquatic species are listed in the Chass. or Homosassa,
> except Manatees. Have they been included in the impact assessment for this
> project?
>
> The role of USGS is to provide scientific support to the regulatory
> agencies to help them make management decisions using best available
> science, not to regulate resources. My current focus on these types of
> issues are in the ACF basin, where reduced flows have resulted in the
> "take" of endangered species. Even in this case, the organisms typically
> lose the war over water but agencies do have more leverage by using the
> ESA. This issue is not going away and we hope by prioritizing our efforts
> on systems supporting T and E species, we can develop models and monitoring
> programs that will be useful when determining MFL's for other aquatic
> systems.
>
> I hope this information is useful and personally, I discourage the planned
> withdraws but as an employee of USGS with very limited information and no
> data specific to the system in question, there is little I can do.
>
> I salute your efforts, encourage your fight and wish you and these rivers
> the very best.
>
> - Nate
>
>
> On Dec 23, 2010, at 11:40 AM, Hope wrote:
> Hi Nate,
>
> Thank you again for your help with the Chassahowitzka mussels.
> You are one of the only people I have corresponded with that is in a
> Federal agency, rather than a state agency. I've been watching a lot of
> "Florida Channel" lately, and all the "buzz" about State de-regulation has

> me worried that state agencies will be even less inclined (or able) to
> protect Florida's natural resources, as Tallahassee seems hell bent on
> satisfying the demands of the developers at the expense of the environment.
> Florida springs seem like a national treasure, if not a world one; like the
> Everglades, the reefs, and the Amazon. Can you think of any Federal
> offices whose legal protection could be invoked to protect Florida's
> springs if the State fails to do so, or chooses the needs of
> people/development over the needs of wildlife?
>
> I attended a discussion on Florida's karst geography last night, and the
> presenter, a retired geology professor, currently volunteering to map
> sinkholes and caves in the Withlacoochee State Forest, said that "the
> Withlacoochee State Forest would be a terrible place to locate a major
> wellfield" (like the one SWFWMD is proposing there, and another a bit
> farther south, for near-by proposed Quarry Reserve Development of Regional
> Impact). He warned that not only would large-scale pumping likely result
> in sinkholes and depression areas in the surrounding area, but will
> significantly alter the amount and quality of fresh water available to the
> nearby Homosassa and Chassahowitzka Spring complexes.
>
> SWFWMD's push for the significant decreases in spring flow to both the
> Chassahowitzka and Homosassa seem less interested in the public's best
> interests, and more in the interests of a few large-scale developers. The
> State seems to only serve the interests of the developers, and continuously
> seems to neglect or protect the needs of wildlife and habitat. Is there
> any Federal regulatory agency that can step in to protect these resources?
>
> Thanks for any advice you can offer,
> Hope
>
> Thank you Nathan for your prompt reply, and for your interest in the
> Chassahowitzka MFL. We too are concerned that SWFWMD has failed to
> consider biological system consequences to their increased
> withdrawals, and to their planned 7.5 million gallon per day well in
> the nearby Withlacoochee State Forest Citrus Tract. I am but a poor
> "house wife," and concerned citizen. Florida is my native home; I
> regard the species with whom I share it, my sisters and brothers;
> sadly they seem to have neither voice nor political clout. We are
> grateful for anything you could possibly do to help prevent further
> habitat loss. Would you be willing to write a "comment" to SWFWMD
> and the Governing Board regarding the Chassahowitzka MFL? There's
> still time prior to the next Governing Board meeting on this issue.
> The MFL process seems flawed, and fresh water species were not
> adequately addressed in the present Chassahowitzka MFL (most species
> included seemed to me largely euryhaline). Even the Vallisneria data
> was "thrown out," as Mr. Heyl found the sensitivity to salinity
> indicated by the data "contrary to his observations." I found
> scientific literature online to the contrary, and have forwarded it
> to Mr. Heyl and Mr. Kelly.
> Both Mr. Heyl and Mr. Kelly stated at the Second Public Workshop that
> "only new scientific data," would be sufficient cause to make them
> reconsider the recommendations, findings, and conclusions of the
> present Chassahowitzka MFL report.
> Perhaps you have existing information (prior published data regarding
> loss of habitat and death of fresh water mussels that you allude to
> in your email) that you might be willing to send them (or a link to
> same)?
> Here's a link to the page where SWFWMD posts PDF and document links
> to the MFL reports (along with contact information for Mr. Kelly in a
> side bar): http://www.swfwmd.state.fl.us/projects/mfl/mfl_reports.php

> Here's a link to the SWFWMD 2010 regional water supply plan (with
> suggestions for the 7.5 million gallon per day wellfield in
> "southwestern Citrus County"
> http://www.swfwmd.state.fl.us/documents/plans/RWSP/drafts/NPR-Public-Draft-4_20_10.pdf
>
> I would love to learn more about our mussel and fish habitat here in
> Chassahowitzka if you ever find yourself out here surveying (or if
> you need some cheap "labor"). I am conveniently located, have
> waterproof snake boots, and have past experience as a field grunt for
> biological surveys:)
>
> Thank goodness for conscientious scientists like you, and for the
> USGS, the only agency that seems to acknowledge Florida's precarious
> fresh water supply situation (you'd think Marella & Berndt's 2005
> findings would be a wake up call...but no, most of the legislature
> still seems hell-bent on "build, baby build."
>
> Thanks again,
> let me know if there's any way I can help you, help us, help
> Florida:)
> Hope
> ----- Original Message -----
> From: Nathan Johnson
> To: hopecorona@tampabay.rr.com
> Cc: Jim Williams ; Rob Robins
> Sent: Wednesday, December 22, 2010 3:38 PM
> Subject: Re: Elliptio host: Fw: GSFGWNR3 Elliptio Host Question
>
> Hello Hope -
>
> Thanks for the inquiry. My name is Nate Johnson and I am the Mussel
> Ecologist at the USGS-SESC in Gainesville. Due to my recent hired,
> it is probably still difficult to locate me on the SESC webpage. I
> am happy to help with your question and wish to learn more about
> the Chassahowitzka MFL. The proposed 11% reduction is probably bad
> news for mussels and other aquatics. Over the past 3+ years of
> sampling in the ACF basin, I have witnesses 100's of mussels stranded
> without water. It is a grim site and undoubtedly has negative
> impacts on their populations.
>
> I've yet to sample the Chassahowitzka but based on my experience in
> that area and the photos you provided, you may have two species,
> Elliptio jayensis and Uniomerus caroliniana. The host fishes for
> these two species are unknown. Glochidia from other Elliptio species
> have been confirmed to transform on the following: Pomoxis annularis,
> Alosa chrysochloris, Etheostoma artesiae, Percina nigrofaciata,
> Lepomis macrochirus, Micropteris salmoides, Gambusia holbrooki,
> Ammocrypta meridiana and Fundulus diaphanus. Species diversity
> within the Genus Elliptio is high (30+ species) therefore, it would
> be necessary to conduct a host fish study to confirm suitable host
> fishes for Elliptio jayensis.
>
> Host fish for Uniomerus are almost completely unknown. I know of one
> study, which tested and confirmed Notemigonus crysoleucas as host for
> Uniomerus tetralasmus.
>
> In fact, host fish information is lacking for most of peninsular
> Florida's unionid fauna. This is a ripe area for research and
> directly related to my research interests and experimental
> capabilities at USGS-SESC. Let me know if you have additional

> questions or research needs, especially those specific to freshwater
> mussels.
>
> Cheers,
> - Nate
>
>
> On Dec 22, 2010, at 2:01 PM, Rob Robins wrote:
>
> Fellas,
> If you field this request (and I hope you do) please cc me on
> the reply.
>
> Best,
>
> Rob
>
> -------- Original Message --------
>
> Subject: Elliptio host: Fw: GSFGWNR3 Elliptio Host
> Question
>
> Date: Wed, 22 Dec 2010 10:18:29 -0500
>
> From: Hope <hopecorona@tampabay.rr.com>
>
> To: Rob Robins <rhrobins@flmnh.ufl.edu>
>
>
>
>
> Hi Rob,
> I'm sorry I didn't think to ask you first, but perhaps you have
> seen some specimens come in with glochidia from Elliptio? I'm
> not sure which Elliptio species we have here (see photos
> below). Never heard back from Dr. Williams (my email was
> probably so rambling he thought I was a crazy person). The
> images below are low res for easy emailing, but can send the
> full resolution to anyone who can help identify them. (See
> email to USGS below).
> Thanks again for your help,
> hope
>
> ----- Original Message -----
> From: Hope
> To: GS-N-MCMC ESIC
> Sent: Tuesday, December 21, 2010 1:31 PM
> Subject: Elliptio host: Fw: GSFGWNR3 Elliptio Host Question
>
> Hello USGS-Rolla, MO
> Thank you for your reply and links to local USGS offices. I
> searched the contacts in the Southeast office, and forwarded my
> question to one of the mussel researchers (I think) that was
> listed on one of the USGS papers published online. See copy of
> email below.
> I look forward to receiving any Elliptio host fish information
> that USGS may be able to provide. Please feel free also to
> contact SWFWMD directly to inquire as to whether fresh water
> mussel and host fish habitat were considered in the
> Chassahowitzka MFL.

> Here is a link to the SWFWMD page where links to the
> Chassahowitzka MFL report and supporting documents are listed:
> http://www.swfwmd.state.fl.us/projects/mfl/mfl_reports.php
> Thanks again,
> Hope Corona
>
>
> ----- Original Message -----
> From: Hope
> To: druessler@usgs.gov
> Sent: Monday, December 20, 2010 12:51 PM
> Subject: Re: GSFGWNR3 Elliptio Host Question
>
> Hello,
>
> Feel free to forward this to the right person.
> We're trying to figure out which fish hosts Elliptio freshwater
> mussels in our area (Chassahowitzka).
> We can send higher resolution images if you need them (didn't
> want to choke your "in box").
> Thanks for your help,
> Hope Corona
> hopecorona@tampabay.rr.com
> 352-382-2809 or 352-302-4466
>
> <Mail Attachment.jpeg>
>
> <Mail Attachment.jpeg>
>
>
>
> ----- Original Message -----
> From: GS-N-MCMC ESIC
> To: hopecorona@tampabay.rr.com
> Cc: archive_ask@usgs.gov ; mcmcesic@usgs.gov
> Sent: Tuesday, December 21, 2010 12:45 PM
> Subject: Re: Elliptio mussels in Chassahowitzka
>
>
>
> Thank you for contacting ASK USGS.
>
> Hope, I would think the SWFWMD would have researched this
> before making assessments, but I am going to list the USGS
> Ecological Science Center and the USGS Water Science Center to
> contact and inquire if they have made any studies on this
> subject.
>
> http://fl.biology.usgs.gov/
>
> http://fl.biology.usgs.gov/All_Staff/all_staff.html
>
> http://fl.water.usgs.gov/
>
> http://fl.water.usgs.gov/information_requests/fl_nw_wellfield_study.html
>
>
>
> I hope this information is helpful. Please feel free to
> contact the USGS again.

>
>
> USGS-Rolla, MO
> Communications and Publishing
> Science Information
> 888-ASK-USGS (275-8747)
> Follow us on Twitter: @USGSASK
>
>
> hopecorona@tampabay.rr.com
> To: mcmcesic@usgs.gov
> cc: archive_ask@usgs.gov
> 12/20/2010 11:31 AM Subject: Elliptio mussels
> in Chassahowitzka
>
>
>
>
>
> Transaction=GSFGWNR3 [20DEC2010 17:31:41UTC]
> Customer email: hopecorona@tampabay.rr.com
> Customer: Hope Corona
> Customer phone: 352-382-2809
> Subject: Elliptio mussels in Chassahowitzka
> Primary response: mcmcesic@usgs.gov
>
> USGS PERSONNEL: This email was generated through the Contact
> USGS system. When replying to the customer PLEASE BE SURE TO CC
> archive_ask@usgs.gov. (Customers, please do not send email to
> archive_ask, as it will not be answered.) If you answer by
> phone, simply forward this email to archive_ask@usgs.gov. You
> can see more information about replying to customers at <
> http://answers.usgs.gov/usgs/responding.htm> (USGS only).
> ==========
>
> Hello,
> I'm having trouble finding information about host fish for the
> Elliptio mussels we are finding in the spring runs North of
> Riviera Point, and east of the main spring complex of the
> Chassahowitzka River. SWFWMD is presently recommending a very
> aggressive flow reduction (11.1% reduction in flow) in their
> current Chassahowitzka MFL Report. We are concerned that the
> SWFWMD has not adequately addressed consequences of flow
> reduction to some of the imperiled freshwater species and
> habitats in Chassahowitzka River system. I have jpg images of
> the Elliptio and spring run, if that will help. I have thus
> far been unable to find Elliptio host fish information in
> online references, but noticed that you had some postings on
> Florida mussel and host research. Thanks for any insight or
> help you can offer.
>
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> Email scanned by PC Tools - No viruses or spyware found.
> (Email Guard: 7.0.0.21, Virus/Spyware Database: 6.16560)
> http://www.pctools.com
> =======
>
> ---
> Nathan A. Johnson
> Ph.D. Candidate - University of Florida
>
> Mussel Ecologist - US Geological Survey
> Southeast Ecological Science Center
> 7920 NW 71st Street
> Gainesville, FL 32653-3701
> PH: (352) 264-3574 FAX: (352) 378-4956
> Cell: (540) 239-0876
> E-mail: najohnson@usgs.gov
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> Email scanned by PC Tools - No viruses or spyware found.
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> Email scanned by PC Tools - No viruses or spyware found.
> (Email Guard: 7.0.0.26, Virus/Spyware Database: 6.18260)
> http://www.pctools.com
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>

Nathan A. Johnson
Ph.D. Candidate - University of Florida

Mussel Ecologist - US Geological Survey
Southeast Ecological Science Center
7920 NW 71st Street
Gainesville, FL 32653-3701
Office: (352) 264-3574 Fax: (352) 378-4956
Cell: (540) 239-0876
E-mail: najohnson@usgs.gov

September 27, 2011

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Letter to the editor/opinion piece by Mr. Ron Miller published in the Citrus County Chronicle

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This memorandum documents an opinion piece addressing development of Springs Coast minimum flows and levels that was submitted by Mr. Ron Miller and published in the Citrus County Chronicle. A copy of the opinion piece is attached to this memorandum.

DAL
Attachment: Opinion article published in the Citrus County Chronicle

Citrus County Chronicle - Opinion - Commentary
Sept. 18, 2011

Save Our Waters Week 2011: The MFL program: authorized destruction

"It is not an unreasonable expectation based upon this state's history that if an MFL for the Chassahowitzka will allow a reduction of 11 percent of its current flow, inevitably groundwater pumping will be permitted from the springsheds that will permanently reduce the river to that level. In other words, the District is setting the stage for groundwater withdrawals that will permanently lower the river's flow to this level and the projected 15 percent reduction in habitat will no longer be scientific theory but permanent fact in perpetuity."
— Sonny Vergara

Although the above quote by Sonny Vergara, executive director of the Southwest Florida Water Management District from 1997-2003, was referring to the Chassahowitkza, his statement is appropriate for all of the coastal springs and rivers.

The Minimum Flows and Levels program (MFL) is a legislative directive to the water management districts to define how much water can be taken from a water body before incurring significant harm to the water resources or the ecology of the area. The Southwest Florida Water Management District, commonly called Swiftmud, has arbitrarily, in my opinion, defined significant harm as a 15 percent destruction of species or habitat.

Once viewed as protective of water resources, the MFL has evolved into setting consumptive objectives: 11 percent for the Chassahowitzka River; 5 percent for the Homosassa River; and a yet-to-be-determined percentage for the Crystal and Withlacoochee rivers.

If you look at the big picture, the MLF program is, in reality, a statewide project to create a map of water sources available for developments. In Citrus County, planners and engineers have already defined where the first well fields will be for "regional distribution" of the Homosassa and Chassahowitzka waters. The MFL program can and I believe will, if unchanged, lead to the destruction of our unique, fragile and already impacted coastal springs and rivers.

Once in place, it will be a litmus test. There will be no contesting the taking of water up to the MFL percentage. For Citrus County, the catch is that once wells are in place, the sky is the limit. There is no way of measuring if the MFL is being exceeded on the coastal springs and rivers. You cannot put a specific level or flow on a tidal river. If you say the river cannot go below a certain level, it assuredly will when the tides and winds push the waters out of the rivers, especially during a drought. Therefore, all regulatory controls will depend upon aquifer models, which will be found inadequate.

Freshwater flow effects in a spring-fed estuary environment are very complex. Swiftmud scientists did a good job when evaluating the Homosassa. It is not just a water level but also the interaction of the fresh spring water and the gulf saltwater. A very sensitive, low-salinity zone exists near the Homosassa Springs that is fundamental to the web of life. Reducing spring flow allows the water salinity to increase, eventually destroying this zone and the many species that depend on it.

Swiftmud studies show the Homosassa to be very sensitive to the spring flow. If you cut the flow 1 percent, you will lose 15 percent of the bass. Cut flow 2 percent, you will lose 15 percent of the blue crabs. Cut a little more and the bass and blue crabs are history.

In the Homosassa area, barnacles are showing up on pilings near the springs. This has happened quickly and has come as a shock to local river observers. In the Chassahowitzka area, essentially all of the hydric hardwoods near the riverbank and the edge of the hammock have died for a distance of over a quarter mile from the coastal hammock's western edge. Aquatic vegetation has become seriously degraded and is disappearing.

Consistent with the water management studies, residents have concluded that this is the result of a rise in the river's salinity and reduced flows from the springs. In other words, the rivers are already in significant decline. Yet Swiftmud now is proposing an MFL that will allow additional groundwater withdrawals, which will further diminish the spring flows. This begs the question: Why would it want to do this?

To its credit, Swiftmud is currently conducting a series of public workshops to search for new ideas to improve the current MFL program. And some interesting items have come forth.

One such item is the Outstanding Florida Waterways (OFW) law which states, "Outstanding Florida Waters shall be worthy of special protection because of their natural attributes. Projects regulated by the Water Management District that are proposed within an OFW must not lower existing ambient water quality, which is defined as the water quality at the time of OFW designation."

As of 1993, all these coastal rivers were designated as Outstanding Florida Waterways. It is well documented that the flows of these rivers have already decreased substantially since 1993. The MFL, therefore, doesn't have to result in a 15 percent destruction of habitat and the decline of the springs, since that time should be taken into account.

Another item is that the water management program has not incorporated information from the Impaired Waters program as defined by the Florida Department of Environmental Protection (DEP). All of the coastal rivers are already in serious stress and are on the DEP Impaired Waters list.

An idea brought forth by the Withlacoochee Area Residents is to use the Cross Florida Barge Canal to impound fresh water for restoration and future water supply. This would provide a high volume of fresh water with little impact on the springs and rivers.

Finally, Swiftmud refuses to consider the hundreds of millions of dollars spent to establish the Coastal Springs Greenway, the Chassahowitzka National Wildlife Refuge, the state wildlife management areas, the Crystal River Buffer Preserve, the Ellie Schiller Homosassa Springs Wildlife State Park or the St. Martins Aquatic Preserves. All were established to protect these coastal resources.

There are choices to be made. Clearly Swiftmud can choose to bring some of these alternatives into the MFL program, or it can choose to authorize the destruction of our coastal springs and rivers.

Ron Miller is vice president of the Homosassa River Alliance.

May 14, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Letter to the editor of The Citrus County Chronicle by Jim Bitter

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This memorandum documents a letter to the editor of The Citrus County Chronicle from Jim Bitter.

DAL
Attachment

Citrus County Chronicle - Opinion - Letter
Oct. 26, 2011

Thanks, Chronicle

As president of the Homosassa River Alliance, I want to thank the Chronicle for its excellent coverage of Save Our Waters Week and its recent editorial pointing out the frightening assault on our local waterways. Let us hope that they will serve as a wake-up call to all of our citizens of what is going on.

I have attended all of the stakeholders meetings currently being conducted by the **Southwest Florida Water Management District** in regard to minimum flows and levels on our local waterways. It is like following Alice through her looking glass, where up becomes down, black becomes white and fiction becomes fact.

We are being asked to believe that it is OK to do further damage to already seriously impaired waterways; it is OK to ignore existing laws which say that no further damage can be done to these waterways; it is OK to ignore the fact that two primary fish species, the black bass and the bream, have completely disappeared from the Homosassa River in the last five years; it is OK to ignore the vast body of evidence that tells us these water bodies, which are the life blood of recreational and economic life, are being systematically destroyed for the benefit of outside interests which have no other interest in our community than to drain the water right out from under us.

Strangely silent in all of this either individually or as a body is our Board of County Commissioners. Please keep up your good work. The bully pulpit is yours.

Jim C. Bitter
Homosassa

May 14, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Editorial on Chassahowitzka and Homosassa Minimum Flows published in the Citrus County Chronicle

---

This memorandum documents an editorial published in the Citrus County Chronicle regarding minimum flows and levels development for the Chassahowitzka and Homosassa River systems.

DAL
Attachment

Citrus County Chronicle - Opinion - Editorial
Oct. 1, 2011

Authorized waterways destruction

Saturday, October 1, 2011 at 12:00 am *(Updated: October 1, 12:16 am)*

By the Chronicle Editorial Board

THE ISSUE:
Minimum flows and levels proposals.

OUR OPINION:
A blueprint for
irreversible harm.

How's this for a plan:
1. Focus on your most precious asset, one that others covet, too.
2. Determine a level of damage to it that would produce "significant harm."
3. Assume that the "significant harm" level will be status quo in the future.

Are you happy with that? Doubtful. But it's a scenario that's playing out here, with the precious asset being our water resources and the "others who covet it" being development-oriented folks throughout the region.

Predictably, those who focus on preserving our waters are unhappy with the current Southwest Florida Water Management District (SWFWMD) plan regarding the "minimum flows and levels" for the Homosassa and Chassahowitzka river systems. SWFWMD has been conducting public workshops and this newspaper has printed a number of articles about it, especially during the recent Save Our Waters Week observances. But it's still a fuzzy area for many residents.

The Minimum Flows and Levels (MFL) program originally was meant to safeguard waters, including our fragile and sensitive coastal springs. The idea was to use science to identify areas in need of preservation and even recovery.

However, the current version of the program is viewed more as a way to legitimize the taking of our waters to benefit others, a step that will irreversibly damage our rivers and coastal areas.

SWFWMD has defined "significant harm" to a water body as a 15 percent loss of habitat or other resources. So, the thinking goes, activities such as increased pumping and regional distribution of our water are fine as long as the "significant harm" threshold is not exceeded.

The current SWFWMD plan would allow an 11 percent reduction in flow for the Chassahowitzka River and a 5 percent reduction in flow for the Homosassa River, a plan with which former SWFWMD executive director Sonny Vergara and Homosassa River Alliance representative Ron Miller strongly disagree.

Miller put it in very practical terms in a recent column: If the spring flow to the Homosassa River is cut by 1 percent, "you will lose 15 percent of the bass. Cut flow 2 percent, you lose 15 percent of the blue crabs. Cut a little more and the bass and blue crabs are history."

Our river systems have long been designated Outstanding Florida Waters, defined as a "special category of waterbodies … which shall be worthy of special protection because of their natural attributes." Refuges and preserves were established to protect these coastal resources. Additionally, our river systems are on the state's Impaired Waters list, which means they're already in serious stress.

But the official attitude these days is that it's OK to crowd the definition of what's allowable, in service to meeting the needs of other, more powerful and development-oriented entities elsewhere.

All this is emblematic of the difference in thinking between our local community and the new leadership in Tallahassee. It's clear that what we consider a resource, they consider a commodity. We support the dedicated and tireless community members who continue to shine the light on bureaucratic finagling and to hold the regulators accountable.

May 14, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Letter to the editor of the St. Petersburg Times by E.V. Myers

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This memorandum documents a letter by E.V. Myers to the editor of the editor of the St. Petersburg Times. The letter addresses development of minimum flows for the Chassahowitzka and Homosassa River systems.

DAL
Attachment

St. Petersburg Times - Opinion - Letter
Oct. 4, 2011

Stop the Overuse of Springs

Hope for springs eternal | Sept. 25

It was interesting to read about the efforts to restore once-beautiful springs that had been killed by overpumping.

The same week, the Southwest Florida Water Management District announced its intention to raise the amounts permitted to be pumped that will affect the Chassahowitzka and Homosassa rivers — both spring-created. Both of these rivers, as well as Crystal River, now have much greater saltwater intrusion due to reduced spring flow and lower water levels.

I wholly support restoration of springs lost but, even more, would like to prevent creating the necessity to do so. Overbuilt and overpopulated areas should not have the right to demand resources from areas where those resources support the local populations.

E.V. Myers, Crystal River

May 14, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Article in the Citrus County Chronicle on minimum flows development for Springs Coast

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This memorandum documents an article written by A. Sidibe on the Springs Coasts Stakeholders workshops held for discussion of minimum flows and levels development.

DAL
Attachment

Citrus County Chronicle
Oct. 27, 2011

Activists: Hands Off Our Water

Stakeholders group wants to stop water withdrawals

By Abdon Sidibe

In the often murky politics of Florida water, fed by the chasm between urban and rural needs, one thing is aquamarine clear to opponents of a water management plan in Citrus County — they want it dead in the water and would pile on if necessary.

Officials of the **Southwest Florida Water Management District, or Swiftmud**, which unveiled a plan to tap into flows of Chassahowitzka and Homosassa rivers, are receptive and continue to be willing to listen to input.

Wednesday, in what could be a last-ditch effort by a working group of stakeholders comprised of activists, government environmental officials, private citizens and politicians, opponents brought in two experts to expand on their case against the Swiftmud plan.

Hydrogeologist Todd Kincaid laid out a study done in the Wakulla Springs/Tallahassee area, and longtime area researcher and environmental scientist Robert Knight spoke about damage to spring-fed areas.

Last June, Swiftmud announced the beginning of a consultative period to gauge reaction to its plan to withdraw up to 5 percent from the Homosassa River and up to 11 percent from the Chassahowitzka.

In subsequent workshops, opposition to the plan has been steady and pretty much on course — withdrawal of water from already depleted waterways will be devastating to the marine life and would allow for more salt water intrusion into the aquifer system. And there's suspicion that water removed from here will be transferred to more populated and thirsty locales further south.

Swiftmud is on record that it wants to listen and weigh all manner of data before making a final recommendation.

"And that is still the plan," said Darcy Brune of Swiftmud. "We want to look at all the factors and information people have to present before a decision is made."

She said she was unsure about the exact date of a decision, but it will happen after the Swiftmud board has a chance to thoroughly examine all the information.

However, stakeholder Brad Rimbey of the Chassahowitzka River Restoration Committee said the only thing good about this plan is if it's dead.

"The whole idea behind the MFLs is to help restore and prevent the further degradation of these rivers, especially since they are on the list of Outstanding Florida Waters (OFW)," Rimbey said.

Forty-one of the state's 1,700 rivers and some lakes and lake chains have been designated as OFWs. In Citrus, the Homosassa, Chasshowitzka and Withlacoochee rivers have been so designated.

The designation also means, according to Rimbey, that Swiftmud cannot allow discharges to OFWs that would lower ambient (existing) water quality.

"And, it is clear if they withdraw 11 percent out of the Chassahowitzka, there will be more saltwater intrusion and that would degrade the water quality," he said.

Rimbey thinks Swiftmud ought just withdraw the plan and try to come up with a plan that should be helping restore some of the marine life and water flow the rivers enjoyed in the past.

In his presentation Wednesday, Kincaid shared data from a study which clearly demonstrated correlation between increased withdrawals of water in Tallahassee and the increased intrusion of salt water into Spring Creek from the Gulf.

"The simple answer is, we shouldn't permit more than we can allocate," he said.

Knight, the other expert, buttressed his points about the effects of ecological impairment at springs by giving the example of Silver Springs, which he had studied for a long time.

He said a year-long study revealed dwindling productivity in the springs and the growth of algae which, in turn, is driving down the number of visitors to the once-pristine attraction.

Rimbey said after the workshop he hopes the latest presentations helped change officials' minds. He said if all fails, they may take the next step of legal action.

"Hope it never comes to that, but it may be the only way to settle it."

Chronicle reporter A.B. Sidibe can be reached at (352) 564-2925 or at asidibe@chronicleonline.com.

May 14, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning grouping of spring systems

---

This memorandum documents correspondence related to the grouping of springs along the Springs Coast.

DAL
Attachment

From: Marty Kelly
To: Doug Leeper; Mike Heyl
Subject: FW: Chronicle article on impaired waters
Date: Thursday, November 17, 2011 8:19:17 AM

Guys,

Any opinion on this; I'm having trouble keeping up with all these spring names.

Thanks

From: Brad Rimbey@CRRC [mailto:BWR.CRRC@tampabay.rr.com]
Sent: Wednesday, November 16, 2011 6:19 PM
To: Espy, Julie
Cc: Dan Hilliard; Ron Miller; Marty Kelly
Subject: Re: Chronicle article on impaired waters

Hi Julie,
After thinking about this, I think it does make a difference whether DEP's impaired springs grouping is consistent with SWFWMD's MFL springs grouping. As was discussed in the Nov 7, 2011 meeting in Homosassa, the relationship between pollutant concentration and spring flow rate is integrally related. Since SWFWMD is proposing to reduce the spring flow rate of the Chassahowitzka spring system unilaterally by 11% and reduce the spring flow rate of the Homosassa spring system unilaterally by 5%, it follows that DEP and SWFWMD need to be on the same page as to which spring flows are to be degraded by SWFWMD's proposed amounts.
I am copying Marty Kelly at SWFWMD with this email in case he would like to contribute an opinion.
Brad W. Rimbey for the
Chassahowitzka River Restoration Committee
----- Original Message -----

From: Espy, Julie

To: Brad Rimbey@CRRC

Cc: Ron Miller

Sent: Tuesday, November 15, 2011 9:02 AM

Subject: RE: Chronicle article on impaired waters

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Thank you for bringing this to our attention.

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

Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.

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Version: 2012.0.1869 / Virus Database: 2092/4606 - Release Date: 11/09/11
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To: Marty Kelly; Doug Leeper
Subject: RE: Chronicle article on impaired waters
Date: Thursday, November 17, 2011 8:55:08 AM
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Not sure if I want to challenge the statement because I don't want to start a firestorm of emails that need to be answered, but I'm open to suggestions.
MGH
==========
Michael G. Heyl - Chief Environmental Scientist
Mike.Heyl@SWFWMD.state.fl.us or Mike.Heyl@WaterMatters.org
==========
SWFWMD/Ecologic Evaluation (7:00 am - 3:30 pm)
7601 U.S. Highway 301 1-813-985-7481 Ext 2211
Tampa, Fl. 33637-6759 1-813-987-6747 (Fax)
--------- Note : District Limit for Incoming Email is 5 Megabytes -------
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This email consists of 100% recycled electrons. Consider the environment before printing
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From: Doug Leeper
To: Mike Heyl; Marty Kelly
Subject: RE: Chronicle article on impaired waters
Date: Thursday, November 17, 2011 11:06:43 AM

Mike & Marty:
Bob Knight's response to a few questions related to nitrate/flow relationships are in the workshop minutes. In the draft meeting response document that I'm developing I note that staff agrees with Bob's responses (as included in the notes) concerning this issue. Hopefully you will see this draft document later today and can then decide whether to add anything more…

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

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SWFWMD/Ecologic Evaluation (7:00 am - 3:30 pm)
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From: Marty Kelly
To: Doug Leeper; Mike Heyl
Subject: FW: Chronicle article on impaired waters
Date: Thursday, November 17, 2011 9:59:11 AM

FYI – looks like Julie would like some input here. So we will need to discuss.

From: Espy, Julie [mailto:Julie.Espy@dep.state.fl.us]
Sent: Thursday, November 17, 2011 9:43 AM
To: Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Marty Kelly; Kurisko, Paul
Subject: RE: Chronicle article on impaired waters

Brad,

Thanks for the additional info. Our planning unit designations are just boundaries primarily used to assist in breaking the state into smaller units. Unless the water management district is using our planning unit boundaries to define the areas they are designating for reduced flow, there really is no connection between the two as I see it. I agree that pollutant loading and flow are integrally related, but our planning unit boundaries do not create an obstacle for pollutant source identification or pollutant load reductions. When TMDLs are developed to address pollutant loading, they look at flows from all sources associated with a WBID.

That being said, we have followed up on this and based on information we have received from our springs folks the source of these springs lies within the Chassahowitzka River planning unit but the water that flows from the springs goes to the Homosassa River. So for the assessment of flow they may more accurately be associated with the Homosassa River, but for an assessment of water quality the sources of pollutants would be the Chassahowitzka area.

Marty, do have any input here? I'm not sure how you determined the groupings for both rivers,

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Date: Thursday, November 17, 2011 10:01:51 AM

Julie,

I've forwarded your email trains onto Doug Leeper and Mike Heyl, our two most knowledgeable scientists on these systems, and we'll formulate a collective response for you.

Marty

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Brad W. Rimbey for the
Chassahowitzka River Restoration Committee

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From: Doug Leeper
To: Marty Kelly
Cc: Ron Basso; Dave Dewitt; Mike Heyl
Subject: RE: Chronicle article on impaired waters
Date: Thursday, November 17, 2011 1:13:38 PM

Marty:

Not sure what the Department of Environmental Protection should do regarding their water quality assessment planning unit boundaries, but for minimum flows and levels purposes, I think it is appropriate to include Bluebird Springs and the springs that contribute flows to Hidden River within the greater Homosassa River system.

Bluebird Springs and Hidden River are located in a United States Geological Survey surface water drainage basin that is separate from the basin that contains other components of the Homosassa River system (Direct Runoff to Gulf vs. the Homosassa River basin), but review of available springshed boundary information and several published reports suggests that it is reasonable to include them within the Homosassa River system. Springshed and spring location maps are shown in Figures 2-3 and 2-6, respectively, in the draft Homosassa River minimum flows and levels report (Leeper et al. 2010), and these figures support grouping with the Homosassa system. Examination of springshed boundaries included in Department of Environmental Protection GIS layers also supports the grouping of Bluebird and Hidden River springs in the greater Homosassa River system. Hidden River is grouped with Homosassa River springs in United States Geological Survey (e.g., Cherry et al. 1970, Knochenmus and Yobbi 2001) and District (e.g., Jones et al. 2011, Champion and Starks 2001) reports. Bluebird Springs is not mentioned in most reports that include information on Citrus County springs, although Scott et al. (2004) note that the Bluebird Spring run "travels an unknown distance westward virtually parallel to the Homosassa River and is presumed to eventually enter the river".

I've copied Mike Heyl, Dave DeWitt and Ron Basso on this e-mail, in case they want to add anything or offer different opinions regarding the grouping of Bluebird Springs and the springs of Hidden River with the Homosassa or Chassahowitzka River systems. ----- Seems we can then respond to July Espy.

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Documents Cited

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From: Marty Kelly
Sent: Thursday, November 17, 2011 10:02 AM
To: Espy, Julie; Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Kurisko, Paul; Doug Leeper; Mike Heyl
Subject: RE: Chronicle article on impaired waters

Julie,

I've forwarded your email trains onto Doug Leeper and Mike Heyl, our two most knowledgeable scientists on these systems, and we'll formulate a collective response for you.

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From: Espy, Julie [mailto:Julie.Espy@dep.state.fl.us]
Sent: Thursday, November 17, 2011 9:43 AM
To: Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Marty Kelly; Kurisko, Paul
Subject: RE: Chronicle article on impaired waters

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Marty, do have any input here? I'm not sure how you determined the groupings for both rivers, but if we need to change our planning unit boundary, we can.

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850-245-8416
julie.espy@dep.state.fl.us

From: Brad Rimbey@CRRC [mailto:BWR.CRRC@tampabay.rr.com]
Sent: Wednesday, November 16, 2011 6:19 PM

To: Espy, Julie
Cc: Dan Hilliard; Ron Miller; Marty.Kelly@swfwmd.state.fl.us
Subject: Re: Chronicle article on impaired waters
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Brad W. Rimbey for the
Chassahowitzka River Restoration Committee
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This link shows the location of these springs
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From: Mike Heyl
To: Doug Leeper
Subject: FW: Chronicle article on impaired waters
Date: Thursday, November 17, 2011 1:18:42 PM
Doug – early exchange with Dave DeWitt. Fyi.
MGH
==========
Michael G. Heyl - Chief Environmental Scientist
Mike.Heyl@SWFWMD.state.fl.us or Mike.Heyl@WaterMatters.org
==========
SWFWMD/Ecologic Evaluation (7:00 am - 3:30 pm)
7601 U.S. Highway 301 1-813-985-7481 Ext 2211
Tampa, Fl. 33637-6759 1-813-987-6747 (Fax)
--------- Note : District Limit for Incoming Email is 5 Megabytes -------
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This email consists of 100% recycled electrons. Consider the environment before printing
==========
Please Note: All e-mail sent to and from this address is automatically archived
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and is available for inspection by the public upon request.
From: Dave Dewitt
Sent: Thursday, November 17, 2011 12:08 PM
To: Mike Heyl
Cc: Marty Kelly
Subject: RE: Chronicle article on impaired waters
That doesn't make any sense to me either. We received inquiries from the DEP about this in January (Debra Harrington and Paul Kurisko were working on it) and they were going to make some reassignments of WBIDs to better reflect the receiving waters for Hidden River. I agree that Hidden River, and more obviously Bluebird Spring, should be associated with Homosassa (WBID 1345), rather than with Chassahowitzka (WBID 1348), and they should change those assignments. They got Otter Creek in the correct Planning Unit – Homosassa, (although the WBID number is still a 1348-series), so it would be advisable for the DEP to revise the Homosassa Planning Unit boundary to include Hidden River Springs and Bluebird Spring, and also change the WBID designations of Otter Creek, Bluebird Spring and Hidden River to a 1345-series.
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: Mike Heyl
Sent: Thursday, November 17, 2011 10:13 AM
To: Dave Dewitt
Cc: Marty Kelly

Subject: FW: Chronicle article on impaired waters

Dave – We will be responding to this, but I can't figure out what the FDEP springs folks are saying about the flow going to the Homosassa, but the source of pollutants being in the Chassahowitzka area. Can you follow this – and if so, could you explain it to me?

Thanks in advance.

MGH

From: Marty Kelly
Sent: Thursday, November 17, 2011 9:59 AM
To: Doug Leeper; Mike Heyl
Subject: FW: Chronicle article on impaired waters

FYI – looks like Julie would like some input here. So we will need to discuss.

From: Espy, Julie [mailto:Julie.Espy@dep.state.fl.us]
Sent: Thursday, November 17, 2011 9:43 AM
To: Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Marty Kelly; Kurisko, Paul
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Subject: Re: Chronicle article on impaired waters

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To: Doug Leeper
Cc: Ron Basso; Dave Dewitt; Mike Heyl
Subject: RE: Chronicle article on impaired waters
Date: Monday, November 21, 2011 2:07:31 PM

Doug, Everyone,
Pretty much think I'll copy Doug's response below and send to Julie Espy – any objections? I'll send tomorrow, pending any comments.
Thanks
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Cc: Ron Basso; Dave Dewitt; Mike Heyl
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To: Marty Kelly; Doug Leeper
Cc: Ron Basso; Mike Heyl
Subject: RE: Chronicle article on impaired waters
Date: Monday, November 21, 2011 3:16:14 PM

Yes that covers it, and Julie indicated they can change the Planning Unit boundary to associate those springs with Homosassa (although they should get the WBID numbers straight also, as I mentioned previously, to match the correct system).

David J. DeWitt, P.G.
Water Quality Monitoring Program
Resource Data and Restoration Department
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From: Marty Kelly
Sent: Thursday, November 17, 2011 10:02 AM
To: Espy, Julie; Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Kurisko, Paul; Doug Leeper; Mike Heyl
Subject: RE: Chronicle article on impaired waters

Julie,
I’ve forwarded your email trains onto Doug Leeper and Mike Heyl, our two most knowledgeable scientists on these systems, and we’ll formulate a collective response for you.
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From: Espy, Julie [mailto:Julie.Espy@dep.state.fl.us]
Sent: Thursday, November 17, 2011 9:43 AM
To: Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Marty Kelly; Kurisko, Paul
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850-245-8416
julie.espy@dep.state.fl.us
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To: Espy, Julie
Cc: Dan Hilliard; Ron Miller; Marty.Kelly@swfwmd.state.fl.us
Subject: Re: Chronicle article on impaired waters
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I am copying Marty Kelly at SWFWMD with this email in case he would like to contribute an opinion.
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Chassahowitzka River Restoration Committee
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Please take a few minutes to share your comments on the service you received from the department

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No virus found in this message.
Checked by AVG - www.avg.com
Version: 2012.0.1869 / Virus Database: 2092/4606 - Release Date: 11/09/11
From: Doug Leeper
To: Marty Kelly
Subject: RE: Chronicle article on impaired waters
Date: Monday, November 21, 2011 3:22:48 PM
Attachments: 1028 E-Mail string form MHeyl - FW_ Chronicle article on impaired waters 17nov2011.pdf
Stuff from DDeWitt that may be of use…
Douglas A. Leeper
Chief Environmental Scientist
Resource Projects Department
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604-6899
1-800-423-1476, ext. 4272 (FL only)
352-796-7211, ext. 4272
352-754-6885 (Fax)
doug.leeper@watermatters.org
From: Marty Kelly
Sent: Monday, November 21, 2011 2:07 PM
To: Doug Leeper
Cc: Ron Basso; Dave Dewitt; Mike Heyl
Subject: RE: Chronicle article on impaired waters
Doug, Everyone,
Pretty much think I'll copy Doug's response below and send to Julie Espy – any objections? I'll send tomorrow, pending any comments.
Thanks
From: Doug Leeper

Sent: Thursday, November 17, 2011 1:14 PM
To: Marty Kelly
Cc: Ron Basso; Dave Dewitt; Mike Heyl
Subject: RE: Chronicle article on impaired waters

Marty:

Not sure what the Department of Environmental Protection should do regarding their water quality assessment planning unit boundaries, but for minimum flows and levels purposes, I think it is appropriate to include Bluebird Springs and the springs that contribute flows to Hidden River within the greater Homosassa River system.

Bluebird Springs and Hidden River are located in a United States Geological Survey surface water drainage basin that is separate from the basin that contains other components of the Homosassa River system (Direct Runoff to Gulf vs. the Homosassa River basin), but review of available springshed boundary information and several published reports suggests that it is reasonable to include them within the Homosassa River system. Springshed and spring location maps are shown in Figures 2-3 and 2-6, respectively, in the draft Homosassa River minimum flows and levels report (Leeper et al. 2010), and these figures support grouping with the Homosassa system. Examination of springshed boundaries included in Department of Environmental Protection GIS layers also supports the grouping of Bluebird and Hidden River springs in the greater Homosassa River system. Hidden River is grouped with Homosassa River springs in United States Geological Survey (e.g., Cherry et al. 1970, Knochenmus and Yobbi 2001) and District (e.g., Jones et al. 2011, Champion and Starks 2001) reports. Bluebird Springs is not mentioned in most reports that include information on Citrus County springs, although Scott et al. (2004) note that the Bluebird Spring run "travels an unknown distance westward virtually parallel to the Homosassa River and is presumed to eventually enter the river".

I've copied Mike Heyl, Dave DeWitt and Ron Basso on this e-mail, in case they want to add anything or offer different opinions regarding the grouping of Bluebird Springs and the springs of Hidden River with the Homosassa or Chassahowitzka River systems. ----- Seems we can then respond to July Espy.

Douglas A. Leeper
Chief Environmental Scientist
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Documents Cited

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From: Marty Kelly
To: Espy, Julie
Cc: Brad Rimbey; Doug Leeper; Mike Heyl; Ron Basso; Dave Dewitt

Subject: RE: Chronicle article on impaired waters
Date: Thursday, December 08, 2011 10:32:59 AM

Julie,

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Julie, I hope this information is helpful, and I appreciate you contacting us regarding this matter.

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Brad,

Thanks, also for copying me on this.

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Subject: RE: Chronicle article on impaired waters

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

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Sent: Wednesday, November 16, 2011 6:19 PM
To: Espy, Julie
Cc: Dan Hilliard; Ron Miller; Marty.Kelly@swfwmd.state.fl.us
Subject: Re: Chronicle article on impaired waters

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I am copying Marty Kelly at SWFWMD with this email in case he would like to contribute an opinion.

Brad W. Rimbey for the
Chassahowitzka River Restoration Committee

----- Original Message -----

From: Espy, Julie

To: Brad Rimbey@CRRC

Cc: Ron Miller

Sent: Tuesday, November 15, 2011 9:02 AM

Subject: RE: Chronicle article on impaired waters

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Should the DEP impaired waters group listing of Bluebird and Hidden River be consistent with the SWFWMD MFL grouping?
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From: Marty Kelly
To: Doug Leeper
Subject: FW: Chronicle article on impaired waters
Date: Thursday, December 08, 2011 1:34:35 PM

Just an FYI – Brad acknowledging receipt of email to Julie

From: Brad Rimbey [mailto:brimbey3@tampabay.rr.com]
Sent: Thursday, December 08, 2011 12:56 PM
To: Marty Kelly
Subject: Re: Chronicle article on impaired waters

Thanks Marty.
Brad
----- Original Message -----

From: Marty Kelly
To: Espy, Julie
Cc: Brad Rimbey ; Doug Leeper ; Mike Heyl ; Ron Basso ; Dave Dewitt
Sent: Thursday, December 08, 2011 10:32 AM
Subject: RE: Chronicle article on impaired waters

Julie,

Sorry for taking so long to respond, but I have consulted with staff and here is our collective view.

For minimum flows and levels purposes, we think it is appropriate to include Bluebird Springs and the springs that contribute flows to Hidden River within the greater Homosassa River system.

Bluebird Springs and Hidden River are located in a United States Geological Survey surface water drainage basin that is separate from the basin that contains other components of the Homosassa River system (Direct Runoff to Gulf vs. the Homosassa River basin), but review of available springshed boundary information and several published reports suggests that it is reasonable to include them within the Homosassa River system. Springshed and spring location maps are shown in Figures 2-3 and 2-6, respectively, in the draft Homosassa River minimum flows and levels report (Leeper et al. 2010), and these figures support grouping with the Homosassa system. Examination of springshed boundaries included in Department of Environmental Protection GIS layers also supports the grouping of Bluebird and Hidden River springs in the greater Homosassa River system. Hidden River is grouped with Homosassa River springs in United States Geological Survey (e.g., Cherry et al. 1970, Knochenmus and Yobbi 2001) and District (e.g., Jones et al. 2011, Champion and Starks 2001) reports. Bluebird Springs is not mentioned in most reports that include information on Citrus County springs, although Scott et al. (2004) note that the Bluebird Spring run "travels an unknown distance westward virtually parallel to the Homosassa River and is presumed to eventually enter the river".

In summary, our staff are of the opinion that Hidden River and Bluebird Spring should be associated with Homosassa (WBID 1345), rather than with Chassahowitzka (WBID 1348). Otter Creek is in the correct Planning Unit – Homosassa, although the WBID number is still a 1348-series. It might be advisable to revise the Homosassa Planning Unit boundary to include Hidden River Springs and Bluebird Spring, and also change the WBID designation of Otter Creek, Bluebird Spring and Hidden River to a 1345 series.

Julie, I hope this information is helpful, and I appreciate you contacting us regarding this matter.

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Thanks, also for copying me on this.

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Documents Cited

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Sent: Thursday, November 17, 2011 9:43 AM
To: Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Marty Kelly; Kurisko, Paul

Subject: RE: Chronicle article on impaired waters

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From: Ron Miller
To: Marty Folk
Subject: Please add **Subject:** Please add the Bluebird Spring And Hidden River to the SWFWMD model.
Date: Thursday, December 08, 2011 2:44:23 PM

Hi Marty,
Interesting information. Please add the Bluebird Springs and Hidden River to the SWFWMD water management model. Bluebird Springs is especially interesting since a Citrus County Park is based on these waters.
Ron

From: mailto:BWR.CRRC@tampabay.rr.com
Sent: Thursday, December 08, 2011 12:53 PM
To: Dan Hilliard ; Ron Miller
Subject: Fw: Chronicle article on impaired waters
FYI
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May 14, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Editorial on Chassahowitzka and Homosassa Minimum Flows published in the Citrus County Chronicle

---

This memorandum documents an editorial published in the Citrus County Chronicle on November 5, 2011, regarding minimum flows and levels development for the Chassahowitzka and Homosassa River systems.

DAL
Attachment

Citrus County Chronicle - Opinion - Editorial
Nov. 5, 2011

Keep Water a Resource, Not a Commodity

THE ISSUE:
Water district plan could cut flow in local rivers.
OUR OPINION:
Scrap the plan and save the rivers.

Our rivers and springs are the jewels of our state. Fed by a vast aquifer system, Florida's natural waters are the source of water for homes, businesses, agriculture and recreation, and they support a natural habitat that is a significant part of what makes Florida such a great place to live and visit.

But these waters have come under increasing pressure from a growing population and from agricultural uses that tap into the aquifer that underlies Florida and serves as the source of most of the state's water.

Four decades ago, leaders realized that waters of the state were a vital resource **and passed legislation to create five water management boards** to "manage these resources in a manner to ensure their sustainability." The geographic boundaries of these districts were determined by watersheds and other natural, hydrologic and geographical features.

These water management districts were given broad powers to regulate water use, and a later constitutional amendment gave these districts the authority to levy property taxes to fund their activities. However, while recognizing that the state's waters were a valuable resource, the enabling legislation for water districts also directed these districts to "encourage the use of water from sources nearest the area of use or application wherever practical."

In 2003, a report from a business and industry group recommended a statewide board with authority to pipe water from "water rich" areas in North Florida to "water poor" areas to the south. This report caused a firestorm of protest, including resolutions in more than 30 counties opposing the plan. It was eventually dropped.

However, the current direction of our water management district's "minimum flows and levels" examination of local waters has re-ignited this issue and has caused concern that policies developed under this program could lead to permanent damage to the county's springs and rivers.

The Minimum Flows and Levels (MFL) program was originally meant to safeguard waters of the state, and was placed into law when many natural systems were being diverted or pumped at a rate that would destroy them. By statute, the minimum flow is "the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area."
Our water management district has defined "significant harm" as being a 15 percent loss of habitat or other resources. Under this definition, a 5 percent reduction could be allowed in flow of the Homosassa River, and an 11 percent reduction could be allowed in the Chassahowitzka River.

The concern is if these reductions would be allowed, they would then set the stage for withdrawals from the watershed of the rivers so long as these withdrawals do not exceed the "significant harm" threshold. This policy is an open invitation to come and pump so long as the use does not reach the "significant harm" threshold.

We believe this policy could lead to irreparable damage to the system of coastal springs and rivers that provide much of our unique and beautiful environment. Knowing when withdrawals from the river or aquifer will harm a system is not an exact science, and the 15 percent threshold is an arbitrary number.

Our rivers and springs are not commodities to be bought and sold. They are a precious resource to be protected. The original mission of our water management districts was to protect these resources. We urge officials to keep to that mission and scrap any plan to make these resources a commodity.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Petition regarding proposed minimum flows for the Homosassa and Chassahowtizka River systems

---

This memorandum documents the submission of a petition by Janice Howie regarding proposed minimum flows for the Homosassa and Chassahowitzka River systems. The petition was signed by a number of stakeholders and is attached to this memorandum along with associated correspondence.

DAL
Attachments

From:	Doug Leeper
To:	"janicehowie@aol.com"
Cc:	"albert@conservationfoundation.com"; "bkbeswick@aol.com"; "carlosb@medallionhome.com"; "dtharp@embarqmail.com"; "jadams@abbeyadams.com"; "judyw1@tampabay.rr.com"; "michael@2riversranch.net"; "neilcombee@yahoo.com"; "senft1hp2u@aol.com"; "todd@pressmaninc.com"; "hgramling@tbwg.org"; "jclosshe@tampabay.rr.com"; "rmaggard@tampabay.rr.com"; Blake Guillory
Bcc:	Barbara Matrone; Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Doug Leeper; Gary E. Williams; Jay Yingling; Karen Lloyd; Ken Weber; Lou Kavouras; Mark Barcelo; Mark Hammond; Marty Kelly; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject:	Petition Concerning Chassahowitzka and Homosassa MFLs
Date:	Tuesday, November 15, 2011 1:06:14 PM
Attachments:	Petition from JHowie and Others 08nov2011.pdf

Ms. Howie:

Thank you for your recent submission regarding the currently proposed minimum flows and levels for the Chassahowitzka and Homosassa River systems. The Southwest Florida Water Management District received the petition you sent via the U.S. Mail and appreciates your concern and that of the other 37 individuals who signed the document.

A scanned copy of the petition is attached to this e-mail and will be included, along with other public input we have received on the proposed minimum flows and levels, in the appendices of revised minimum flows and levels reports that the District is preparing for the two river systems. The specific comments outlined in the petition will be reviewed by staff as we develop final recommendations regarding minimum flow rule amendments that will be presented to the District Governing Board. Please note that all public input, including the petition you submitted, will be available for review by Governing Board members.

Please feel free to contact me if you have additional comments or questions related to the development of minimum flows and levels or other water management issues.

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

November 8, 2011

To the Governing Board of the South West Florida Water Management District:

Re: MFL proposals for the Chassahowitzka and Homosassa Rivers

We the undersigned urge you to **not accept** the Minimum Flow Level (MFL) proposals that the South West Florida Water Management District (SWFWMD) staff will recommend for your approval. While we recognize that a great deal of work and expense went into determining these proposals, we feel that these will do serious damage to the Chassahowitzka and Homosassa Rivers. These rivers and the springs that feed them are unique Florida treasures that have important economic and recreational significance for their communities.

- The current proposal to withdraw 11% of the flow from the Chassahowitzka and 5% of the flow from the Homosassa would by SWFWMD's determination, degrade these rivers and their environments up to 15%, causing "significant harm" to them. This 15% figure is not a scientific one, and is not acceptable.
- Both the Chassahowitzka and the Homosassa been given "Outstanding Florida Waterways" status by the state of Florida, and as such are entitled to special protections by the Florida Statute and Administrative Code. The proposed MFLs are in conflict with that protection.
- The research that was done in determining the MFLs was not adequate in that it did not determine how these withdrawals will affect the perimeters of the springsheds, including smaller springs, swallets and caves, nor was the gross primary productivity determined. The latter is necessary to accurately measure the effects of lower flow on the life in the rivers.

Since these studies would be costly in a time of shrinking budgets, we urge you to **keep the MFLs at their current levels** and revisited this issue in the future.

cc. to Blake Guillory, Executive Director and Doug Leeper, Chief Environmental Scientist.

NAME	CITY and COUNTY	E-MAIL or PHONE
1. John L Howie	New Port Richey	johnhowie2@aol.com
2. Janice L. Howie	New Port Richey	janicehowie@aol.c
3. Gorjon O'Connor #	Hudson	
4. Michael ANDERSON	Dade City	(352) 521-3183
5. Joan Anderson	Bayonet Point	(727) 868-3297
6. Anna DeGrandchamp	Hudson (Pasco)	(727) 389-8810
7. Jerry DeGrandchamp	Hudson (Pasco)	(727) 808-1528
8. Richard STAUFFER	ARIPEA (PASCO)	352-584-7116
9. C.A. Taylor	Inverness	sicktaylor@wildblue.net
10. BARBARA BOWEN	NEW PORT RICHEY, FL	bbowen32@VERIZON.NET
11. Anne-Marie Rokopuk	Port Richey (Pasco)	(727) 847-2310
12. BOB + ANN SCHMIDT	N.P.R. - PASCO	USCHMIDTNME@YAHOO.COM
13. Kathryn PIERSON	Spring Hill - Hernando	352-666-8701
14. BARBARA DeBIK	" "	(352) 556-3940
15. RITA GRANT	Brooksville HERNANDO	727 365 4147
16. Linda Gibbons	NPR PASCO	727 845-1497

To the Governing Board of SWFWMD:

	NAME	CITY and COUNTTY	PHONE or E-MAIL
17.	Mary Goodenough	Port Richey	(727) 264-7560.
18.	[illegible]	Land O Lakes	813 996 7692
19.	Patricia J Watson	LOL	(813) 996-7692
20.	Walter Simpson	Amherst NY	(716) 839-0062
21.	Nan Simpson	Amherst, NY	(716) 839-0062
22.	Wm V Branan	Crystal River FL	352 228 0910
23.	Marcie Clutter	Inverness FL	352 419-2461
24.	Doris Boreiss	Pasco County New Port Richey	727-842-3133
25.	Reita Riggory	Zephyrhills, FL	813-788-8393
26.	Darnella Schul	NPR, FL PASCO	(937) 241-7760
27.	Susan Beach Vaughn	Bayonet Pt, fl - PASCO	727-863-0531
28.	Sharon Holding	New Port Richey FL	727-843-9771
29.	Peggy Hatcher	Wesley Chapel, Pasco	813-991-4812
30.	Kathy Sanborn	Wesley Chapel Pasco	813-991-7956
31.	Maria Valentin	New Port Richey, Pasco	727-379-6227
32.	Gail Parsons	Odessa	813-920-2730
33.	Jack Kussro	Port Richey, FL	727-868-3069
34.	[illegible]	Land O Lakes FL	813-996-1597
35.	[illegible]	NEW PORT RICHEY PASCO COUNTY	7278481318
36.	Terry Donovan	LAND O'LAKES PASCO COUNTY	813-949-6659
	Corrina Goodnow	LUTZ PASCO COUNTY	8139498924
	Julie Wert	Aripeka FL Pasco	727-863-1363

Ms. Janice L. Howie
5500 Leahy Ln
New Prt Rchy, FL 34652-3133

TAMPA FL 335
SAINT PETERSBURG FL
NOV 2011 PM 3 L

Doug Leeper
Chief Environmental Scientist
SWFWMD
Brooksville, FL 34604-6899

RECEIVED
NOV 10 2011

3460466899

From:	Executive
To:	Lou Kavouras
Cc:	Doug Leeper
Subject:	RE: Chass & Homosassa MFLs Petition
Date:	Tuesday, November 15, 2011 3:01:33 PM

Lou: Blake and the Governing Board also received copies of the petition with yesterday's afternoon mail. I will scan and assign to Doug.

From: Lou Kavouras
Sent: Tuesday, November 15, 2011 10:31 AM
To: Executive
Subject: FW: Chass & Homosassa MFLs Petition

Here's the petition, Phyllis.

Lou Kavouras
Southwest Florida Water Management District
1-352-796-7211 (x4604)

From: Doug Leeper
Sent: Tuesday, November 15, 2011 9:26 AM
To: Lou Kavouras
Cc: Marty Kelly; Mike Heyl; Cara S. Martin
Subject: Chass & Homosassa MFLs Petition

Hi Lou:

I found the attached petition in my mail box yesterday and would like your advice on how best to handle the document.

The petition expresses opposition to proposed minimum flows for the Chassahowitzka and Homosassa River systems.

My plan is to respond via e-mail to the sender of the petition, Ms. Janice Howie, whom I have met at our recent Spring Coast MFLs workshops. In the e-mail I will: 1) acknowledge receipt of the petition; 2) thank Ms. Howie for sending it to us; 3) note that the document will be included in the appendices of revised MFLs reports for the two river systems, along with the other input we have received; and 4) indicate that all public input will be available for review by Governing Board members.

Do you think I need to do something else with the petition, as it is addressed to the District Governing Board and was copied to Blake Guillory and me?

Thanks,

Douglas A. Leeper
Chief Environmental Scientist

Resource Projects Department
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604-6899
1-800-423-1476, ext. 4272 (FL only)
352-796-7211, ext. 4272
352-754-6885 (Fax)
doug.leeper@watermatters.org

From:	Phyllis Young
To:	Mark Hammond; Gwen Brown; Jet Houser
Cc:	Doug Leeper
Subject:	Log # 25493-11 Letter and accompanying petitions (2 pages containing 38 signatures) mailed to the Governing Board (Mr. Guillory and Mr. Leeper were copied.) and received at District Headquarters on November 14, 2011. Petitions are included with "O...
Date:	Tuesday, November 15, 2011 4:12:32 PM
Attachments:	25493-11.pdf

Executive Correspondence-Log Entry

Log #: 25493-11
Assigned To: Mark Hammond
Assigned by: Phyllis Young
Date Assigned: 11/15/2011 3:48:36 PM
Date Completed: 11/15/2011
Date Required:

Copy To: Doug Leeper
Route To: Governing Board, Blake Guillory, Jack Pepper, Kurt Fritsch, Mike Holtkamp, Mark Hammond, David Rathke, Alba Mas, Lou Kavouras
Subject: Urge Governing Board not to accept the proposed MFLs for the Chassahowitzka and Homosassa Rivers
Source: Letter and accompanying petitions (2 pages containing 38 signatures) mailed to the Governing Board (Mr. Guillory and Mr. Leeper were copied.) and received at District Headquarters on November 14, 2011.
Petitions are included with "Original Attached," above.
Instructions: For your information and appropriate disposition
Action Taken:

Original Attached: 25493-11.pdf (See Email Attachments)
Response Attached: None
Email Attached: None

Please click on the following link to open the document ===> (Distrct PC Use Only)

(See attached file: 25493-11.pdf)

November 8, 2011

To the Governing Board of the South West Florida Water Management District:

Re: MFL proposals for the Chassahowitzka and Homosassa Rivers

We the undersigned urge you to **not accept** the Minimum Flow Level (MFL) proposals that the South West Florida Water Management District (SWFWMD) staff will recommend for your approval. While we recognize that a great deal of work and expense went into determining these proposals, we feel that these will do serious damage to the Chassahowitzka and Homosassa Rivers. These rivers and the springs that feed them are unique Florida treasures that have important economic and recreational significance for their communities.

- The current proposal to withdraw 11% of the flow from the Chassahowitzka and 5% of the flow from the Homosassa would by SWFWMD's determination, degrade these rivers and their environments up to 15%, causing "significant harm" to them. This 15% figure is not a scientific one, and is not acceptable.
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- The research that was done in determining the MFLs was not adequate in that it did not determine how these withdrawals will affect the perimeters of the springsheds, including smaller springs, swallets and caves, nor was the gross primary productivity determined. The latter is necessary to accurately measure the effects of lower flow on the life in the rivers.

Since these studies would be costly in a time of shrinking budgets, we urge you to **keep the MFLs at their current levels** and revisited this issue in the future.

cc. to Blake Guillory, Executive Director and Doug Leeper, Chief Environmental Scientist.

	NAME	CITY and COUNTY	E-MAIL or PHONE
1.	John L Howie	New Port Richey	johnhowie2@aol.com
2.	Janice L. Howie	New Port Richey	janicehowie@aol.com
3.	Gogon O'Connor #1	Hudson	gogon_o@yahoo.com
4.	Michael ANDERSON	Dade City	(352) 521-3183
5.	Joan Anderson	Bayonet Point	(727) 868-3297
6.	Anna DeGrandchamp	Hudson (Pasco)	(727) 389-8820
7.	Jerry DeGrandchamp	Hudson (Pasco)	(727) 808-1528
8.	RICKAND STAUFFER	ARIPEA (PASCO)	352-584-7116
9.	C.J. Taylor	Inverness	sjctaylor@wildblue.net
10.	BARBARA BOWEN	NEW PORT RICHEY, FL	bbowen32@VERIZON.NET
11.	Anne-Marie Rokopsek	Port Richey (Pasco)	(727) 847-2310
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13.	Kathryn PIERSON	Spring Hill - Hernando	352-666-8701
14.	BARBARA DUBIK	" "	(352) 556-3940
15.	RITA GRANT	Brooksville HERNANDO	727 365 4147
16.	Linda Gibbons	NPR PASCO	727 845-1497

To the Governing Board of SWFWMD:

	NAME	CITY and COUNTTY	PHONE or E-MAIL
17.	Mary Goodenough	Port Richey	(727) 264-7560.
18.	[illegible]	Land O Lakes	813 996 7692
19.	Patricia J Watson	LOL	(813) 996-7692
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21.	Nan Simpson	Amherst, NY	(716) 839-0062
22.	Wm V Branan	Crystal River FL	352 228 0910
23.	Marcie Clutter	Inverness FL	352 419-2461
24.	Doris Boreiss	Pasco County New Port Richey	727-842-3133
25.	Rita Diggory	Zephyrhills, FL	813-788-8593
26.	Darnella Schul	NPR, FL PASCO	(937) 241-7760
27.	Susan Bead Vaughn	Bayonet Pt, fl-PASCO	727-863-0531
28.	Sharon Holding	New Port Richey FL	727-843-9771
29.	Peggy Thatcher	Wesley Chapel, Pasco	813-991-4812
30.	Kathy Sanborn	Wesley Chapel Pasco	813-991-7956
31.	Maria Valentum	NewPort Richey, Pasco	727-379-6227
32.	Gail Parsons	Odessa	813-920-2730
33.	Jack Russo	Port Richey, FL	727-868-3069
34.	[illegible]	Land O Lakes FL	813-996-1597
35.	[illegible]	NEW PORT RICHEY PASCO COUNTY	727 848 1318
36.	Jerry Donovan	LAND O'LAKES PASCO COUNTY	813-949-6659
	Corrine Goodman	LUTZ PASCO COUNTY	8139498924
	Julie Wert	Aripeka Fl Pasco	727-863-1363

From:	Doug Leeper
To:	Phyllis Young; Executive
Subject:	Executive Correspondence - Log # 25493-11
Date:	Thursday, November 17, 2011 10:30:19 AM
Attachments:	Petition from JHowie and Others 08nov2011.pdf

Phyllis – Here's the e-mail I sent to Ms. Janice Howie on November 15, 2011.

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

From: Doug Leeper
Sent: Tuesday, November 15, 2011 1:06 PM
To: 'janicehowie@aol.com'
Cc: 'albert@conservationfoundation.com'; 'bkbeswick@aol.com'; 'carlosb@medallionhome.com'; 'dtharp@embarqmail.com'; 'jadams@abbeyadams.com'; 'judyw1@tampabay.rr.com'; 'michael@2riversranch.net'; 'neilcombee@yahoo.com'; 'senft1hp2u@aol.com'; 'todd@pressmaninc.com'; 'hgramling@tbwg.org'; 'jclosshe@tampabay.rr.com'; 'rmaggard@tampabay.rr.com'; Blake Guillory
Subject: Petition Concerning Chassahowitzka and Homosassa MFLs

Ms. Howie:

Thank you for your recent submission regarding the currently proposed minimum flows and levels for the Chassahowitzka and Homosassa River systems. The Southwest Florida Water Management District received the petition you sent via the U.S. Mail and appreciates your concern and that of the other 37 individuals who signed the document.

A scanned copy of the petition is attached to this e-mail and will be included, along with other public input we have received on the proposed minimum flows and levels, in the appendices of revised minimum flows and levels reports that the District is preparing for the two river systems. The specific comments outlined in the petition will be reviewed by staff as we develop final recommendations regarding minimum flow rule amendments that will be presented to the District Governing Board. Please note that all public input, including the petition you submitted, will be available for review by Governing Board members.

Please feel free to contact me if you have additional comments or questions related to the development of minimum flows and levels or other water management issues.

Douglas A. Leeper
Chief Environmental Scientist

Resource Projects Department
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604-6899
1-800-423-1476, ext. 4272 (FL only)
352-796-7211, ext. 4272
352-754-6885 (Fax)
doug.leeper@watermatters.org

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Article in the Citrus County Chronicle on minimum flows development for coastal rivers

---

This memorandum documents an article written by Jim Hunter on the development of minimum flows and levels for the Springs Coast. The article was published on December 26, 2011.

DAL
Attachment

Citrus County Chronicle
Dec. 26, 2011

Some Resist Proposed MFLs for Coastal Rivers

By Jim Hunter

Citrus County is more than halfway through the process mandated by the Florida legislature in 1997 for water managers to set minimum flows and levels for all major bodies of water in the state.

Some citizens and environmental groups, including The Homosassa River Alliance, Friends of the Chassahowitzka, TOOFAR and the Withlacoochee Area Residents, have opposed the currently recommended minimum flows and levels (MFLs), which would allow 5 percent reduction flow in the Homosassa and 15 percent in the Chassahowitzka.

The idea was to set minimum levels below which rivers, lakes or springs and their ecologies would be significantly damaged. That level would be used in planning, water management systems and permitting regarding withdrawals that could affect the area's water resources.

The **Southwest Florida Water Management District (sometimes called Swiftmud)** and the four other water districts in the state were ordered to set Minimum Flows and levels, or MFLs. The district oversees permitting in 16 counties of large public, commercial, industrial, and agricultural withdrawals of water from wells or surface waters.

To date, 181 bodies of water have MFLs in the district. In Citrus, MFLs for the Floral City, Inverness and Hernando pools of the Tsala Apopka Lake chain have been adopted, as well as Fort Cooper Lake.

The data collection and analysis for the Homosassa River system and the Chassahowitzka River system have been done, but the district staff's draft recommendations for MFLs has not yet been finalized and adopted by the water district's governing board. Those two proposed MFLs have met with resistance from the environmental community in the county.

The only other remaining MFLs to be done in Citrus County will be for the King's Bay springs/Crystal River system and the lower Withlacoochee River system that runs through the county forming its eastern and northern border on its way to the gulf. Those MFLs are slated to be developed in 2012.

At this point, the extensive data gathering and modeling studies on the Homosassa and Chassahowitzka rivers and springs systems are finished, and scientific peer reviews have endorsed the studies' methodology and recommendations. The public point of view has been taken through a series of meetings with a group of local citizen stakeholders, the Springs Coast MFL Working Group.

Some citizens and environmental groups, including The Homosassa River Alliance, Friends of the Chassahowitzka, TOOFAR and the Withlacoochee Area Residents, have opposed the currently recommended MFLs, which would allow 5 percent reduction flow in the Homosassa and 15 percent in the Chassahowitzka.

Ron Miller, longtime Citrus County environmental activist and member of the Homosassa River Alliance, said the groups believe the MFLs should not allow any reduction. "There is no room to take water out. It's already a depleted system," he said of the Homosassa.

"The River Alliance position is that they (the water district) base it all on a hypothetical model that has flaws." He said there are just too many complicating variables and unknowns to allow percentage withdrawals of such a sensitive resource based on a questionable mathematical model.

The study itself said, he noted, that just a 1 percent reduction in flow of the Homosassa would mean the loss of half the bass in the river. A 2 percent reduction would result in the loss of the larger blue crabs in the river, or 15 percent. "It's incredibly complex, incredibly sensitive," he said of the river system. Allowing any percentage reduction of flow is simply harming the river, he said.

Miller said the only way to set a figure is use a specific number in relation to withdrawals in a watershed and after that nothing would be allowed. He was not sure if the county itself had the authority to do that but felt that might be the best way to go about it.

He said the district had asked for public input and had gotten it, saying it would use that input to make modifications in the proposed MFLs. "The ball's now in Swiftmud's court," he said. "We'll see what they do."

Water district Ecologic Evaluation Section Manager Marty Kelly said the water district staff is mulling over the public input and issues raised at those meetings. "We're still considering what our recommendations might be, he said."

A staff response to issues raised at the last work group meeting was scheduled to be posted on the district Web site last week.

The water district staff will issue its final report by mid-January and the recommended MFLs for the two rivers will go to the governing board of the district for adoption in late February. Any changes from the draft would be made public with the final report, Kelly said, but he did not discuss what that might be. “We are still kicking around some stuff internally,” he said.

Al Grubman, president of TOOFAR, a citizen environmental group dedicated to water issues and education, said his group sided with the Homosassa River Alliance in contending that just reducing the recommended MFLs a few percent to compromise isn’t sufficient.

The bottom line was, “Every drop taken is reducing those two rivers,” he said.

Water district spokesman Michael Molligan said the situation is made more complicated in that constitutes “significant harm” is not specifically defined in the law. “We are trying to set a reasonable standard.” he said.

The Chassahowitzka study, for example, illustrates the problem of the definition of “significant harm, noting the law on creating MFLs gives little guidance concerning identification of generally applicable thresholds associated with changes in flows or levels, either in the primary or secondary scientific and resource management literature. The definition of “significant harm, the report said, “often becomes a policy decision rather than a technical decision.”

Molligan said and the percentage of loss of habitat used in the Chassahowitzka modeling has been used in other locations. The modeling uses the best data and scientific methods available, he said, and and the scientific peer reviews have confirmed that, agreeing with the recommendations. “If we are way off base, they will tell us.” He said MFLs are ongoing processes, and can be modified if better data is obtained.

At present, the Citrus environmental groups are waiting to see what if any changes may have been made in the proposals in the final report that will go to the district governing board in February. That will determine, as a number of environmental group members have said, whether they want to consider going to court over the issue.

MINIMUM FLOWS AND LEVELS

Information about Minimum Flows and Levels (MFLs) in Citrus County:

+ General MFL info: To get more information on MFLs go to the water district Web page at: www.swfwmd.state.fl.us/projects/mfl/.

+ Springs Coast Working group info: To get information, including background information and reports, on the Springs Coast MFL working group, go to: www.swfwmd.state.fl.us/projects/mfl/springs-coast-mfl.php. The water district manager contact for the Springs Coast Working group is: Doug Leeper, chief environmental scientist resource projects (doug.leeper@watermatters.org or 800-423-1476 , ext. 4272).

+ To make comments on MFLs: To make comments on the Citrus County MFLs for the Chassahowitzka River System and Springs (includes Chassahowitzka Main, Chassahowitzka No.1, Crab Creek, Potter, Ruth and Blind Springs) or the Homosassa River System and Springs (includes Halls River Springs, Southeast Fork Homosassa River Springs, Homosassa Main Springs, Hidden River Springs) go to the water district’s website at www.swfwmd.state.fl.us/projects/mfl/comments.php.

Jim Hunter can be reached at jimhunter.chronicle@gmail.com.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Media contact from reporter for the Citrus County Chronicle regarding minimum flows development for coastal rivers

---

This memorandum documents a media contact by Jim Hunter with the Citrus County Chronicle regarding development of minimum flows and levels for the Springs Coast.

DAL
Attachment

From:	SWFWMD Daily Media Report
To:	All_Users
Subject:	SWFWMD Daily Media Report
Date:	Monday, December 12, 2011 3:49:42 PM

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
DAILY MEDIA CONTACTS
12/12/2011
As of 4:00 p.m.

Reporter's Name: Jim Hunter
Media Outlet: Citrus County Chronicle
Reason for Call: MFLs in Citrus County
Agency's Response: Reporter contacted staff for information on Minimum Flows and Levels (MFLs) in Citrus County. Reporter has specific questions about MFLs for the Chassahowitzka and Homosassa rivers. The District expects that the proposed minimum flows for the two rivers will be brought before the Governing Board for approval in February. There are no groundwater levels set as part of the MFL for the two rivers, however the river minimum flows can affect how much groundwater is permitted to be withdrawn. An applicant for a groundwater permit in those areas will need to provide reasonable assurance that the withdrawal will not lower the river below its minimum flow. Districtwide, 181 MFL have been established.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Ecologic Evaluation Section, Southwest Florida Water Management District

SUBJECT: Editorial in the Citrus County Chronicle on minimum flows development for the Springs Coast

---

This memorandum documents an editorial on minimum flows development for the Springs Coast that was published in the Citrus County Chronicle on January 4, 2012.

DAL
Attachment

Citrus County Chronicle - Opinion - Editorial
Jan. 4, 2012

Changing Times Call for United Front

by the Chronicle Editorial Board

THE ISSUE: Scientist warns about overdrawing water account.
OUR OPINION: We need a strategy to assure water resources for future generations.

Florida has long been blessed with an abundant supply of good water, but we have not always been good stewards of the resource. Growth and profligate use have created water shortages in many areas of the state.

This is the background against which the **Southwest Florida Water Management District (SWFWMD)** is evaluating how much water can be taken from local rivers without "significant harm" to the river system. The numbers under discussion are a 5 percent reduction of flow in the Homosassa River and an 11 percent reduction in the Chassahowitzka.

Local environmental groups believe this kind of flow reduction would have severe negative consequences, and have opposed planned reductions in the flow of either river. In December, a water scientist warned the county commission that our water supply should be treated like a bank account — and that we are dangerously close to overdrawing it.

Dr. Todd Kincaid told the board that, in effect, we are mining water from the aquifer. Like a bank account, if we take out more than is put in, the aquifer will run low on water. This can lead to reduction or loss of spring flow and to saltwater intrusion along the coast.

Since recharge of the aquifer is a function of natural events, primarily rainfall, we have no realistic way of adding water back. The only reasonable way to maintain levels in the aquifer is to limit the amount we remove to the level added through natural recharge. As Dr. Kincaid said, "The Floridan aquifer cannot supply everyone with all of their water needs or dreams, but it can provide for a sustainable society and economy if managed properly."

Doing this requires a long-term strategy for managing our water resources. This task has been made more difficult by the current administration's dismantling and restructuring of agencies, including the Department of Community Affairs, which were formerly tasked with making long-term development and environmental plans.

While making a long-term plans is difficult in a short-term society, we encourage our county leaders, our legislative delegation, and authorities at SWFWMD to work together to develop an effective and realistic long-term plan for managing our water resources to assure that our rivers won't face further degradation.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning use of flow records for developing minimum flow recommendations

---

This memorandum documents correspondence with Dana Bryan, Florida Department of Environmental Protection, concerning use of flow records for developing minimum flow recommendations for the Homosassa River system. A response from Doug Leeper, Southwest Florida Water Management District, is included in the correspondence, and indicates that historical as well as more recent daily means data would be included in a revised report for the river system. Mr. Leeper noted that he would likely not present summary statistics for the combined data sets and would consider presenting annual values based on the records, if it seemed useful. Mr. Leeper also noted that differences between historical and more recent flow records for the river system would be discussed in the revised report.

A current draft version of a revised minimum flows report for the river system, dated May 14, 2012, include summary statistics for the individual records and the combined data sets. The report also includes a caveat that addresses the influence of sample size for the two flow records on summary statistics for the combined data set.

DAL
Attachments

From:	Bryan, Dana
To:	Doug Leeper
Cc:	Voyles, Carolyn; Yerian, Art; Owen, Richard
Subject:	Homosassa MFL
Date:	Tuesday, January 31, 2012 9:22:26 AM

Hi, Doug! We haven't talked or emailed for a while, so I would appreciate an update on how the Homosassa MFL determination process and schedule are progressing.

I remember from the stakeholder meetings that SWFWMD was considering calculating the baseflow differently than what was done in the draft technical document – what was decided? As you might remember, I argued that the 90 measurements of higher historical flow should neither be ignored nor averaged in with more recent lower flow measurements, but rather should be used as evidence that discharge has already substantially declined in the spring system.

Thanks, in advance, for an update! - DCB

Dana C. Bryan
Environmental Policy Coordinator
Bureau of Natural and Cultural Resources
Florida Park Service
Florida Department of Environmental Protection
Douglas Building - MS 530
3900 Commonwealth Blvd.
Tallahassee, FL 32399-3000
850-245-3104; inter. ext. 53612; dana.bryan@dep.state.fl.us

Visit The ***Real Florida***[sm] at http://www.floridastateparks.org

Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.

From: Voyles, Carolyn
To: Bryan, Dana
Cc: Doug Leeper
Subject: FW: Springs Coast Update
Date: Tuesday, January 31, 2012 9:28:12 AM

Dana,

I'm sorry. I forgot to forward.

Carolyn Voyles
(850) 245-3150

From: Doug Leeper [mailto:Doug.Leeper@swfwmd.state.fl.us]
Sent: Friday, January 20, 2012 3:22 PM
To: Voyles, Carolyn
Subject: RE: Springs Coast Update

Hi Carolyn:

We are still working on the Chassahowitzka and Homosassa MFLs. Current (previously proposed) MFLs are 89 and 95% of natural flows, respectively. I expect that the revised MFLs for Homosassa will be different that currently proposed; not yet sure about the revised MFLs for the Chassahowitzka.

Our plan it to develop and release revised reports by the end of February, allow time for public review/comment, and then take proposed rule amendments to the Governing Board in April.

Work on Crystal River/Kings Bay is ongoing.

Let me know if you need additional information.

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

From: Voyles, Carolyn [mailto:Carolyn.Voyles@dep.state.fl.us]
Sent: Friday, January 13, 2012 3:28 PM
To: Doug Leeper
Subject: Springs Coast Update

Hi Doug!

What is going on with the Springs Coast issues? Have you made any decisions about your approach?

I hope all is well.

Thanks.

Carolyn Voyles

Office of Water Policy

FL Dept. of Environmental Protection

3900 Commonwealth Blvd., MS 46

Tallahassee, FL 32399-3000

(850) 245-3150 (office)

(850) 245-3145 (fax)

Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.

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.

From:	Doug Leeper
To:	"Bryan, Dana"
Cc:	Voyles, Carolyn (Carolyn.Voyles@dep.state.fl.us)
Bcc:	Cara S. Martin; Chris Zajac; Christopher Pettit; Darcy A. Brune; Dave Dewitt; Doug Leeper; Gary E. Williams; Jay Yingling; Karen West; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Michael Molligan; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Tammy Hinkle; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject:	RE: Homosassa MFL
Date:	Tuesday, January 31, 2012 11:46:00 AM

Hi Dana:

Hope all is well with you. I saw that Carolyn Voyles forwarded to you my recent e-mail concerning the District's current Springs Coast MFLs schedule.

With regard to the "historical" flow records for the Homosassa system, I will be including these data in the revised MFLs report. To minimize data density (abundance) effects for the more recently collected record vs. the historical record, I don't plan to present summary statistics based on individual measurements for the combined records. Rather, I think I will present summary statistics for the separate data sets, and if it seem useful, will also present annual average values for the combined data sets. I know this latter approach to data presentation was discussed at one or more of our workshops; I'll see how informative it appears to be, and include the annual average values/statistics in the report if it seems warranted.

I plan to discuss differences between the historic and more recent records, with regard to climatic/natural influences and potential withdrawal impacts. Do not, however, currently plan to use the historic records for the model evaluations/analyses used to identify potentially allowable percentage-of-flow reductions. I will plan on including an argument or "case" for this approach in the revised report.

Look forward to continuing to work with you on the Springs Coast systems.

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doug.leeper@watermatters.org

From: Bryan, Dana [mailto:Dana.Bryan@dep.state.fl.us]
Sent: Tuesday, January 31, 2012 9:22 AM
To: Doug Leeper
Cc: Voyles, Carolyn; Yerian, Art; Owen, Richard
Subject: Homosassa MFL

Hi, Doug! We haven't talked or emailed for a while, so I would appreciate an update on how the Homosassa MFL determination process and schedule are progressing.

I remember from the stakeholder meetings that SWFWMD was considering calculating the baseflow differently than what was done in the draft technical document – what was decided? As you might remember, I argued that the 90 measurements of higher historical flow should neither be ignored nor averaged in with more recent lower flow measurements, but rather should be used as evidence that discharge has already substantially declined in the spring system.

Thanks, in advance, for an update! - DCB

Dana C. Bryan
Environmental Policy Coordinator
Bureau of Natural and Cultural Resources
Florida Park Service
Florida Department of Environmental Protection
Douglas Building - MS 530
3900 Commonwealth Blvd.
Tallahassee, FL 32399-3000
850-245-3104; inter. ext. 53612; dana.bryan@dep.state.fl.us

Visit The ***Real Florida***[sm] at http://www.floridastateparks.org

Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning e-mails from Martyn Johnson

---

This memorandum documents correspondence associated with several e-mails from Martyn Johnson that addresses minimum flows development on the Springs Coast.

DAL
Attachments

From:	Alan Martyn Johnson
To:	Doug Leeper
Cc:	Ron Miller; Al Grubman; Brad Rimbey; Ron Basso; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject:	Homosassa MFL"s
Date:	Tuesday, January 03, 2012 12:59:45 PM

Doug,
It has been some 15 months since you started a process seeking public input regarding the MFL's for the Homosassa River. In a series of public meetings and forming a working group you have heard from members of the public and various stakeholder representatives. In the meetings Chassahowitzka, Crystal River and the Homosassa were involved. The question now is how will all this be incorporated in what is presented to the SWFWMD Board regarding the Chassahowitzka and Homosassa Rivers. I have heard comments about some of the older flow data being incorporated in the report, but it will not influence the data used in the 'all controlling' Northern District Model. I have heard that all the e-mails letters and presentations will be in 'appendices', but I doubt the Board will read these. So what will be presented?

Will a revised draft report or final report be published prior to presentation to the Board?
Will public input regarding major increase in barnacle growth as evidence of harm be included?
Will some preliminary analysis of acoustic doppler flow data SE Fork be included?
Will the USGS review of flow measurements/methodology in the Homosassa be mentioned?

In the Executive Summary page 20 of the July 12, 2010 Peer-Review Draft the wording includes:

Estimated combined discharge past United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River has averaged 152 cubic feet per second (cfs) for the period from 1995 through 2009
……..
Declines in flow to the system associated with groundwater withdrawals were estimated to be approximately 2.3 cfs, including a 1 cfs decline in the springs contributing to flow past the USGS gages in the Homosassa Main Springs run and Southeast Fork. This 1 cfs change in flow was considered insignificant as compared to the estimated average flow of 152 cfs for the two sites, so available flow records for the sites were considered representative of baseline conditions for evaluation of minimum flow criteria. Because break-points in ecological responses were not observed, a fifteen percent loss of resource or habitat was adopted as representative of significant harm.
The most sensitive resource responses to modeled flow reductions were exhibited by fish and invertebrate plankton and nekton, i.e., free-floating and actively swimming organisms. Flow reductions of 2.7 percent or less from median baseline conditions were associated with fifteen percent reductions in predicted abundances of individual pseudo-species or taxa. Similar or increased sensitivity to flow reductions was predicted for many taxa across the range of baseline flows, in particular for baseline flows less than the median flows.
……..…
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a five percent reduction from combined flows measured on a daily basis at the USGS gauge sites in the Homosassa Springs run and Southeast Fork of the Homosassa River.

Reminder: Few believe the 2.3 cfs is an accurate reflection of groundwater withdrawal reduction.

I am hoping that a 'new' Executive Summary will rely less on estimates to develop a defined answer.
Hopefully, through all the meetings/discussion we better recognize the legal requirement to set MFL's was a good concept when it was first enacted. To truly protect the future, minimum levels in the aquifer controlled by strict limits on groundwater withdrawals may be much more effective as a proactive approach for protecting Outstanding Florida Waters along the Spring Coast and all the economic activities which rely on water as a resource.

DECEMBER 13 Memo
Thanks to all who put the efforts into documenting and responding to the October workshop. I have read the December 13 memo posted on the web site. I have a number of comments and questions. For ease of reference I have numbered them.

1. **Semantics over shadow the real issues and cloud the facts.**

December 13 Memo page 4

Staff also notes that a strict definition of "mining groundwater" is where groundwater withdrawals exceed annual recharge to the aquifer, and based on this definition, there is no "mining" of groundwater in the Northern District. In the spring's coast groundwater basin, average recharge to the Upper Floridan aquifer is about 14 inches per year, while current groundwater withdrawals are approximately one inch per year.

Where does this strict definition come from? From my search it does not appear to have made it to the web yet. Sucking water out of the aquifer using power pumps sure sounds like a form of mining which is; *removing minerals* (resources) *from the ground, the process or business of removing minerals* (resources) *from the ground*. Semantics water is not a mineral, but it certainly is a valuable resource for which the equilibrium is moving in the wrong direction.

The facts in the statement. Over 7% of the water making it into the aquifer is being pumped out. This is 7% that does not provide the driving force to push water through the ground to the springs.
No pumping is equilibrium.
Looking at the often quoted Weeki Wachee Well it is clear that the water table has been declining. Similar is true for the Lecanto well mentioned in the July 2010 report.

Graph of DAILY Elevation above NGVD 1929, feet, ,Tampa DCP data

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Can the decline in well level all be attributed to rainfall? Take 2003 and 2004, both years saw high rainfall due to hurricanes and the water table increased to over 23 feet both years, but look how quickly the levels dropped to just over 16 feet. Compare that drop to what happened in the early 80's. Was spring flow lower in the 80's so the water table dropped more slowly? Or, could increased groundwater withdrawals be the difference?

It is always so easy to get apples and oranges mixed, but where do the 14 and 1 inch come from.
Specifically in the quote from page 4, the origin of the *average* 14 inches recharge is not referenced and similarly for the *current* one inch associated with withdrawals.
Appreciated this data may be combined from a number reports.

Looking in the Homosassa reviews, recharge is not mentioned in the July 12, 2010 Draft Review.
In the Appendices to the Review it is stated (page 338 of the pdf file under 2.0 Hydrogeologic Conditions):
The highest recharge rates to the UFA occur in west-central Hernando and Citrus Counties with values ranging between 10 and 25 inches per year (Sepulveda, 2002).
And further (on page 340):

The United States Geological Survey (USGS) developed a water budget for the basin for calendar years 1997 and 1998 (Knochenmus and Yobbi, 2001). According to Knochenmus and Yobbi's calculations, average annual values for the following water budget components were:
Rainfall = 52 inches (in)/yr,
Evapotranspiration = 32 in/yr,
Springflow = 12.5 in/yr,
Groundwater Withdrawals = 0.6 in/yr,
Groundwater Outflow = 6.7 in/yr and
Change in Storage = 0.2 in/yr
Based on the USGS water budget, net recharge to the UFA averaged 20 in/yr for the two-year period. As a percentage of recharge, groundwater withdrawals averaged about three percent of annual recharge.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

2. **Groundwater Withdrawals**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

Something does not seem to add up. Early 2011 the following was a response to a question about new wells:
"Review of the District's Well Construction Database indicates that 213 and 941 permits were issued for withdrawals in Citrus County during the past year and past three years, respectively."……"With regard to water-use permitting……. Fewer than ten of the hundreds of surface- and groundwater use permit requests received by the Brooksville Regulation Department during the past three years were not issued.
Note that this department of the District handles water use permitting for withdrawals in the northern portion of the District, which includes Citrus County, Hernando County, Pasco County, Sumter County, and portions of Lake, Levy and Marion counties."

QUESTION A**: WITH ALL THESE NEW WELLS AND WATER USE PERMITS HOW CAN CONSUMPTION HAVE DECLINED/REMAINED FLAT?** Some data to support the statement would be useful.

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

3. **Rainfall; the giver or the excuse.**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

December 13 Memo page 20

Staff acknowledges Mr. Miller's comments and notes that minimum flows and levels do, in effect, serve to establish a limit or cap beyond which further water withdrawals would be significantly harmful to area water resources and ecology. Once incorporated into District rules, minimum flows and levels become one criterion used in the evaluation of requests for water use permits. Similarly, minimum flows and levels help identify withdrawal limits that are incorporated into water supply planning efforts.

December 13 Memo page 25

Staff acknowledges Mr. Johnson's comments but does not support a five-year moratorium on the issuance or renewal of water use permits for area groundwater withdrawals. Staff does support the careful evaluation of all future renewals or issuances of water use permits in the Springs Coast area and elsewhere in the District.

Actions Speak Louder Than Words.
Sooner or later it will be recognized water management must deal with the rainfall as it occurs. Rainfall is income, you have to deal with the income you have this year.

The growers who tonight (January 3, 2012) will spray tremendous quantities of water from the aquifer on their crops are drawing from limited resources. It appears later rather than sooner attention will be paid to limiting water withdrawals; but for right now water use permits are issued to anyone who submits the correct paperwork. Moreover, when the circumstances are 'such'(like tonight's freeze) the limits will be waived….this highly probable for MFL's also The information regarding well construction and water use permits requested earlier combined with declines at wells in the area over the next few days will help validate if actions speak louder than words.

4, Discharge Measurements

December 13 Memo page 24 and 25

Staff notes that Mr. Grimsley addressed Mr. Johnson's questions about the ongoing efforts related to measurement of discharge in the Southeast Fork of the Homosassa River during the October workshop.

Response: Mr. Kevin Grimsley, with the United States Geological Survey, noted that

equipment used to measure water velocities was installed at the Southeast Fork gage site in September and that negative velocities were recorded at the site last week as a meteorological front passed through the area. Mr. Grimsley added that it would be approximately six months to one year before sufficient data have been obtained for development of a velocity index rating curve for the gage site.

The USGS real time data indicates data from the acoustic doppler flow measuring equipment was operational early September with data collected at 15 minutes past each hour, 24 readings each day. With over 2500 readings some preliminary indication of how this equipment correlates with the calculated discharge data must be possible. The equations for the calculated data were developed by regression analysis of far less data than 2500 measurements.
It is noteworthy that since installation of the acoustic doppler unit, calculated data at the 30 minutes past the hour intervals is being calculated using a dS/dt(change in stage height) component in the formula for 30 minutes rather than for 15 minutes.
At 05:30 on October 19, 2011 the calculated figure was -0.27 cfs; this was calculated using a stage height change of 0.1 (2.67 to 2.77) multiplied by the equation constant of 418.14 or a contribution of -41.8 cfs the next two calculated reading were at 05:45 am of 20 cfs (stage change 2.77 to 2.82) and 06:00 am of 20 cfs (stage change 2.82 to 2.87) both these stage changes result in contribution of -20.91 cfs. Realizing this is more detail than most of you need lets just say this was/is not the only occurrence. Presumably this difference in calcultion will be addressed when the data approval process takes place.

Date/Time	Calculated Discharge	Stage Change
10/19 05:30	-0.27 cfs	0,1
10/27 02:30	-1.1 cfs	0,14
11/22 14:30	-3.0 cfs	0.14
11/27 03:30	-0.17cfs	0.13
11/28 03:30	-3.8 cfs	0.13

On October 19/20, 2011 USGS conducted Field Measurements Acoustic Doppler data collection was suspended from 08:30 until 15:30 allowing 15 minute dS/dt calculated component to be reported. Calculated versus field measurement discharge is shown in the following table.

Number	Date	Time	Stream flow (ft^3/s)	Calculated Flow Real Time Data (ft^3/s)	
180	2011-10-20	05:51	76.2	64	84%
179	2011-10-20	05:24	75.4	59	78%
178	2011-10-19	14:46:30	68.2	51	75%
177	2011-10-19	14:18:30	59.0	51	86%
176	2011-10-19	13:46	59.8	55	92%
175	2011-10-19	13:25	55.8	46	82%
174	2011-10-19	12:54:30	50.6	50	99%
173	2011-10-19	12:26:30	55.8	49	88%
172	2011-10-19	11:59	52.9	45	85%
171	2011-10-19	11:25:30	49.8	49	98%

170	2011-10-19	10:51	43.8	44	100%
169	2011-10-19	10:24	45.2	52	115%

SUMMARY/CONCLUSION

With over 15 months of review the difference between estimated data and a defined MFL should be better understood. Also, the methods by with measurement/monitor compliance will be handled should be more confidently understood and scientifically verifiable.

Protecting and managing a resource as valuable as water to the future economy of the Springs Coast and the ecology of Outstanding Florida Waters in the area is a responsibility that will be assessed in the future. May be if some of the long term residents are respected when they say harm is already evident in the Homosassa River (major increase in barnacle growth, reduced fish population and noticeable flow reductions) the task will be easier.

From:	Ron Basso
To:	Alan Martyn Johnson; Doug Leeper
Cc:	Ron Miller; Al Grubman; Brad Rimbey; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject:	RE: Homosassa MFL"s
Date:	Tuesday, January 03, 2012 4:58:34 PM

Mr. Johnson:

I'll address your questions related to groundwater resources since I wrote the response to these issues.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

These numbers refer to the average recharge in the Northern West-Central Florida groundwater basin, which includes the entire springs coast region – not the individual springsheds. Since groundwater withdrawals can impact spring flow outside the individual springsheds, the District conservatively assesses withdrawal impacts within the much larger Northern West-Central Groundwater Basin. The numbers are averaged from the ND model run from 1996 through 2006 – recharge to the Upper Floridan Aquifer (UFA) averaged 14.7 inches/yr and groundwater withdrawals were 0.9 inches/yr (Reference: Figure 4.34 - *Groundwater Flow and Saltwater Transport Model For the Northern District Water Resources Assessment Project Area*, *Version 3.0,* Hydrogeologic, Inc, 2011).

QUESTION A**: WITH ALL THESE NEW WELLS AND WATER USE PERMITS HOW CAN CONSUMPTION HAVE DECLINED/REMAINED FLAT?** Some data to support the statement would be useful.

During the July 18, 2011 workshop, which I'm not sure you were able to attend, I presented two graphs of public supply withdrawal history for both Hernando and Citrus Counties. Both graphs shows public supply water use declining slightly from its highest usage in 2006. (Reference: Slides 43 and 44 - *http://www.swfwmd.state.fl.us/files/database/site_file_sets/1968/SWFWMD_SLIDES_SHOWN_AT_MEETING_-_Springs_Coast_MFLs_Publ_Wrkshp_18jul2011.pdf*)

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

We'll have to research this question and get back to you. Which area are you referencing? Please keep in mind that many of the well construction permits are not "regulated" by the District if they are for domestic self-supply use (i.e. household wells). Only a well construction permit is required by the driller to install them. We do account for these domestic wells when assessing impacts to aquifer water levels and spring flow by estimating pumping quantities from them in the groundwater flow model. In the Northern District Groundwater flow model, these wells amount to about five percent of all groundwater withdrawals in the basin. A well needs to be 6 inches or greater in diameter, have an ability to pump 100,000 gallons per day (gpd) on average, or a maximum of 1,000,000 gpd to meet water use permitting thresholds. In addition, water use permits are renewed on a 6-year or 10-year basis so some of the permit numbers listed in your email may include renewals of existing quantities.

I believe these were the major questions related to groundwater issues in your email. Please contact me if you have any additional questions or concerns.

Ron Basso, P.G.
Senior Professional Geologist

Hydrologic Evaluation Section
Southwest Florida Water Management District
ph 1-800-423-1476 (in state)
ph 352-796-7211, ext. 4291 (outside state)
FAX 352-797-5799

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Tuesday, January 03, 2012 1:00 PM
To: Doug Leeper
Cc: Ron Miller; Al Grubman; Brad Rimbey; Ron Basso; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject: Homosassa MFL's

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2. **Groundwater Withdrawals**

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Note that this department of the District handles water use permitting for withdrawals in the northern portion of the District, which includes Citrus County, Hernando County, Pasco County, Sumter County, and portions of Lake, Levy and Marion counties."

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QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

3. **Rainfall; the giver or the excuse.**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

December 13 Memo page 20

Staff acknowledges Mr. Miller's comments and notes that minimum flows and levels do, in effect, serve to establish a limit or cap beyond which further water withdrawals would be significantly harmful to area water resources and ecology. Once incorporated into District rules, minimum flows

and levels become one criterion used in the evaluation of requests for water use permits. Similarly, minimum flows and levels help identify withdrawal limits that are incorporated into water supply planning efforts.

December 13 Memo page 25

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Actions Speak Louder Than Words.
Sooner or later it will be recognized water management must deal with the rainfall as it occurs. Rainfall is income, you have to deal with the income you have this year.

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4, Discharge Measurements

December 13 Memo page 24 and 25

Staff notes that Mr. Grimsley addressed Mr. Johnson's questions about the ongoing efforts related to measurement of discharge in the Southeast Fork of the Homosassa River during the October workshop.

Response: Mr. Kevin Grimsley, with the United States Geological Survey, noted that equipment used to measure water velocities was installed at the Southeast Fork gage site in September and that negative velocities were recorded at the site last week as a meteorological front passed through the area. Mr. Grimsley added that it would be approximately six months to one year before sufficient data have been obtained for development of a velocity index rating curve for the gage site.

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At 05:30 on October 19, 2011 the calculated figure was -0.27 cfs; this was calculated using a stage height change of 0.1 (2.67 to 2.77) multiplied by the equation constant of 418.14 or a contribution of -41.8 cfs the next two calculated reading were at 05:45 am of 20 cfs (stage change 2.77 to 2.82) and 06:00 am of 20 cfs (stage change 2.82 to 2.87) both these stage changes result in contribution of -20.91 cfs. Realizing this is more detail than most of you need lets just say this was/is not the only

occurrence. Presumably this difference in calcultion will be addressed when the data approval process takes place.

Date/Time	Calculated Discharge	Stage Change
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10/27 02:30	-1.1 cfs	0,14
11/22 14:30	-3.0 cfs	0.14
11/27 03:30	-0.17cfs	0.13
11/28 03:30	-3.8 cfs	0.13

On October 19/20, 2011 USGS conducted Field Measurements Acoustic Doppler data collection was suspended from 08:30 until 15:30 allowing 15 minute dS/dt calculated component to be reported. Calculated versus field measurement discharge is shown in the following table.

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177	2011-10-19	14:18:30	59.0	51	86%
176	2011-10-19	13:46	59.8	55	92%
175	2011-10-19	13:25	55.8	46	82%
174	2011-10-19	12:54:30	50.6	50	99%
173	2011-10-19	12:26:30	55.8	49	88%
172	2011-10-19	11:59	52.9	45	85%
171	2011-10-19	11:25:30	49.8	49	98%
170	2011-10-19	10:51	43.8	44	100%
169	2011-10-19	10:24	45.2	52	115%

SUMMARY/CONCLUSION

With over 15 months of review the difference between estimated data and a defined MFL should be better understood. Also, the methods by with measurement/monitor compliance will be handled should be more confidently understood and scientifically verifiable.

Protecting and managing a resource as valuable as water to the future economy of the Springs Coast and the ecology of Outstanding Florida Waters in the area is a responsibility that will be assessed in the future. May be if some of the long term residents are respected when they say harm is already evident in the Homosassa River (major increase in barnacle growth, reduced fish population and noticeable flow reductions) the task will be easier.

From:	Alan Martyn Johnson
To:	Ron Basso; Doug Leeper
Cc:	Ron Miller; Al Grubman; Brad Rimbey; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject:	RE: Homosassa MFL"s
Date:	Friday, January 06, 2012 12:36:42 PM

Ron,
Last year Doug provided numbers regarding Well Construction Permits for Citrus County for 2010 and the three years to end of 2010; same basis would be fine.
I realize these are construction permits and withdrawals are estimates.
Doug also gave number of Water Use Permits for the whole district as hundreds with only a few rejected. If it s possible for 2011 to get the number of permits broken down to renewals and new that would again be helpful, particularly if the number rejected/refused accompanies the total. Breakdown by County would be more than I can expect but would be great.
Thanks,
Martyn

From: Ron.Basso@swfwmd.state.fl.us
To: martynellijay@hotmail.com; Doug.Leeper@swfwmd.state.fl.us
CC: rmille76@tampabay.rr.com; grubman1@gmail.com; brimbey3@tampabay.rr.com; Marty.Kelly@swfwmd.state.fl.us; norman@amyhrf.org; jdweaver@usgs.gov; rrodrigu@usgs.gov; kjgrims@usgs.gov
Date: Tue, 3 Jan 2012 16:58:32 -0500
Subject: RE: Homosassa MFL's

Mr. Johnson:

I'll address your questions related to groundwater resources since I wrote the response to these issues.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

These numbers refer to the average recharge in the Northern West-Central Florida groundwater basin, which includes the entire springs coast region – not the individual springsheds. Since groundwater withdrawals can impact spring flow outside the individual springsheds, the District conservatively assesses withdrawal impacts within the much larger Northern West-Central Groundwater Basin. The numbers are averaged from the ND model run from 1996 through 2006 – recharge to the Upper Floridan Aquifer (UFA) averaged 14.7 inches/yr and groundwater withdrawals were 0.9 inches/yr (Reference: Figure 4.34 - *Groundwater Flow and Saltwater Transport Model For the Northern District Water Resources Assessment Project Area, Version 3.0,* Hydrogeologic, Inc, 2011).

QUESTION A**: WITH ALL THESE NEW WELLS AND WATER USE PERMITS HOW CAN CONSUMPTION HAVE DECLINED/REMAINED FLAT?** Some data to support the statement would be useful.

During the July 18, 2011 workshop, which I'm not sure you were able to attend, I presented two graphs of public supply withdrawal history for both Hernando and Citrus Counties. Both graphs shows public supply water use declining slightly from its highest usage in 2006. (Reference: Slides 43 and 44 - *http://www.swfwmd.state.fl.us/files/database/site_file_sets/1968/SWFWMD_SLIDES_SHOWN_AT_MEETING_-_Springs_Coast_MFLs_Publ_Wrkshp_18jul2011.pdf*)

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

We'll have to research this question and get back to you. Which area are you referencing? Please keep in mind that many of the well construction permits are not "regulated" by the District if they are for domestic self-supply use (i.e. household wells). Only a well construction permit is required by the driller to install them. We do account for these domestic wells when assessing impacts to aquifer water levels and spring flow

by estimating pumping quantities from them in the groundwater flow model. In the Northern District Groundwater flow model, these wells amount to about five percent of all groundwater withdrawals in the basin. A well needs to be 6 inches or greater in diameter, have an ability to pump 100,000 gallons per day (gpd) on average, or a maximum of 1,000,000 gpd to meet water use permitting thresholds. In addition, water use permits are renewed on a 6-year or 10-year basis so some of the permit numbers listed in your email may include renewals of existing quantities.

I believe these were the major questions related to groundwater issues in your email. Please contact me if you have any additional questions or concerns.

Ron Basso, P.G.
Senior Professional Geologist
Hydrologic Evaluation Section
Southwest Florida Water Management District
ph 1-800-423-1476 (in state)
ph 352-796-7211, ext. 4291 (outside state)
FAX 352-797-5799

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Tuesday, January 03, 2012 1:00 PM
To: Doug Leeper
Cc: Ron Miller; Al Grubman; Brad Rimbey; Ron Basso; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject: Homosassa MFL's

Doug,
It has been some 15 months since you started a process seeking public input regarding the MFL's for the Homosassa River. In a series of public meetings and forming a working group you have heard from members of the public and various stakeholder representatives. In the meetings Chassahowitzka, Crystal River and the Homosassa were involved. The question now is how will all this be incorporated in what is presented to the SWFWMD Board regarding the Chassahowitzka and Homosassa Rivers. I have heard comments about some of the older flow data being incorporated in the report, but it will not influence the data used in the 'all controlling' Northern District Model. I have heard that all the e-mails letters and presentations will be in 'appendices', but I doubt the Board will read these. So what will be presented?

Will a revised draft report or final report be published prior to presentation to the Board?
Will public input regarding major increase in barnacle growth as evidence of harm be included?
Will some preliminary analysis of acoustic doppler flow data SE Fork be included?
Will the USGS review of flow measurements/methodology in the Homosassa be mentioned?

In the Executive Summary page 20 of the July 12, 2010 Peer-Review Draft the wording includes:

Estimated combined discharge past United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River has averaged 152 cubic feet per second (cfs) for the period from 1995 through 2009
……..
Declines in flow to the system associated with groundwater withdrawals were estimated to be approximately 2.3 cfs, including a 1 cfs decline in the springs contributing to flow past the USGS gages in the Homosassa Main Springs run and Southeast Fork. This 1 cfs change in flow was considered insignificant as compared to the estimated average flow of 152 cfs for the two sites, so available flow records for the sites were considered representative of baseline conditions for evaluation of minimum flow criteria. Because break-points in ecological responses were not observed, a fifteen percent loss of resource or habitat was adopted as representative of significant harm.
The most sensitive resource responses to modeled flow reductions were exhibited by fish and invertebrate plankton and nekton, i.e., free-floating and actively swimming organisms. Flow reductions of 2.7 percent or less

from median baseline conditions were associated with fifteen percent reductions in predicted abundances of individual pseudo-species or taxa. Similar or increased sensitivity to flow reductions was predicted for many taxa across the range of baseline flows, in particular for baseline flows less than the median flows.

……

Modeled responses of a number of salinity-based habitats in the Homosassa River main channel were also relatively sensitive to flow reductions. Flow reductions of less than five percent were associated with more than fifteen percent reductions in selected salinity-based habitats determined from isohalines with salinities of 2, 3, 5 and 12.

……

Based on review of resource and habitat-based criteria, the recommended minimum flows for the Homosassa River system are defined as a five percent reduction from baseline flows. Given the minimal existing withdrawal impacts on flow, the recommended minimum flows are a five percent reduction from combined flows measured on a daily basis at the USGS gauge sites in the Homosassa Springs run and Southeast Fork of the Homosassa River.

Reminder: Few believe the 2.3 cfs is an accurate reflection of groundwater withdrawal reduction.

I am hoping that a 'new' Executive Summary will rely less on estimates to develop a defined answer.
Hopefully, through all the meetings/discussion we better recognize the legal requirement to set MFL's was a good concept when it was first enacted. To truly protect the future, minimum levels in the aquifer controlled by strict limits on groundwater withdrawals may be much more effective as a proactive approach for protecting Outstanding Florida Waters along the Spring Coast and all the economic activities which rely on water as a resource.

DECEMBER 13 Memo
Thanks to all who put the efforts into documenting and responding to the October workshop. I have read the December 13 memo posted on the web site. I have a number of comments and questions. For ease of reference I have numbered them.

1. **Semantics over shadow the real issues and cloud the facts.**

December 13 Memo page 4

Staff also notes that a strict definition of "mining groundwater" is where groundwater withdrawals exceed annual recharge to the aquifer, and based on this definition, there is no "mining" of groundwater in the Northern District. In the spring's coast groundwater basin, average recharge to the Upper Floridan aquifer is about 14 inches per year, while current groundwater withdrawals are approximately one inch per year.

Where does this strict definition come from? From my search it does not appear to have made it to the web yet. Sucking water out of the aquifer using power pumps sure sounds like a form of mining which is; *removing minerals* (resources) *from the ground, the process or business of removing minerals* (resources) *from the ground*. Semantics water is not a mineral, but it certainly is a valuable resource for which the equilibrium is moving in the wrong direction.

The facts in the statement. Over 7% of the water making it into the aquifer is being pumped out. This is 7% that does not provide the driving force to push water through the ground to the springs.
No pumping is equilibrium.
Looking at the often quoted Weeki Wachee Well it is clear that the water table has been declining. Similar is true for the Lecanto well mentioned in the July 2010 report.

Graph of DAILY Elevation above NGVD 1929, feet, ,Tampa DCP data

NOTE: IF THE USGS GRAPH DOES NOT COPY INTO THE E-MAIL; it is the presentation quality graph of daily data on the USGS web site for Weeki Wachee Well 1970-present..

Can the decline in well level all be attributed to rainfall? Take 2003 and 2004, both years saw high rainfall due to hurricanes and the water table increased to over 23 feet both years, but look how quickly the levels dropped to just over 16 feet. Compare that drop to what happened in the early 80's. Was spring flow lower in the 80's so the water table dropped more slowly? Or, could increased groundwater withdrawals be the difference?

It is always so easy to get apples and oranges mixed, but where do the 14 and 1 inch come from.
Specifically in the quote from page 4, the origin of the *average* 14 inches recharge is not referenced and similarly for the *current* one inch associated with withdrawals.
Appreciated this data may be combined from a number reports.

Looking in the Homosassa reviews, recharge is not mentioned in the July 12, 2010 Draft Review.
In the Appendices to the Review it is stated (page 338 of the pdf file under 2.0 Hydrogeologic Conditions):
The highest recharge rates to the UFA occur in west-central Hernando and Citrus Counties with values ranging between 10 and 25 inches per year (Sepulveda, 2002).
And further (on page 340):
The United States Geological Survey (USGS) developed a water budget for the basin for calendar years 1997 and 1998 (Knochenmus and Yobbi, 2001). According to Knochenmus and Yobbi's calculations, average annual values for the following water budget components were:
Rainfall = 52 inches (in)/yr,
Evapotranspiration = 32 in/yr,
Springflow = 12.5 in/yr,
Groundwater Withdrawals = 0.6 in/yr,
Groundwater Outflow = 6.7 in/yr and
Change in Storage = 0.2 in/yr
Based on the USGS water budget, net recharge to the UFA averaged 20 in/yr for the two-year period. As a percentage of recharge, groundwater withdrawals averaged about three percent of annual recharge.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

2. **Groundwater Withdrawals**

December 13 Memo page 6

In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

Something does not seem to add up. Early 2011 the following was a response to a question about new wells:

"Review of the District's Well Construction Database indicates that 213 and 941 permits were issued for withdrawals in Citrus County during the past year and past three years, respectively."……."With regard to water-use permitting……. Fewer than ten of the hundreds of surface- and groundwater use permit requests received by the Brooksville Regulation Department during the past three years were not issued.
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December 13 Memo page 24 and 25

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SUMMARY/CONCLUSION

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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.

From:	Alan Martyn Johnson
To:	Doug Leeper; Marty Kelly; Ron Basso; Ron Miller; Al Grubman; Brad Rimbey; Norman Hopkins; Brent Whitley; Dana Bryan; Kevin J Grimsley; rkane; R Rodriguez; J Weaver; robert.knight@bocc.citrus.fl.us; rebecca.bays@bocc.citrus.fl.us
Date:	Friday, January 06, 2012 12:55:29 PM
Attachments:	Combined Discharge H Springs and SEF Jan2010-Dec2011.xlsx

Further to my comments about a five year moratorium on new groundwater withdrawals made at the Working Group meetings; there was a basis for my comment.

It is often difficult to clearly understand the bottom line. So let me try to put this simply to get Yes or No responses.

1. Is baseline for establishing Minimum Flow for the Homosassa River 152 cubic feet per second combined flows from the USGS gage sites Homosassa Main Spring and SE Fork of Homosassa River (Executive Summary, Draft Peer Review July 2010).
   YES
   NO

2. Is it correct the position taken by SWFWMD is "available data are sufficient for establishing scientifically defensible minimum flows for the…….. Homosassa River…." Available data being from United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River (December 13, 2011 Memo and Peer Review October 2010).
   YES
   NO

3. Is the recommended minimum flows for the Homosassa River system defined as a five percent reduction from baseline flows of 152 cfs which is minimum flow 144 cfs.
   YES
   NO

4. Are criteria set to define when the minimum flow has been reached e.g one day below, one week below, one month below (Peer Review Oct 2010 noted agreement 'minimum flow do not need to be evaluated seasonally').
   YES
   NO

5. If the USGS daily data for combined flows Homosassa Main Spring run and the Southeast Fork of the Homosassa River for the period January 2010 thru December 2011 shows FLOW IS BELOW THE MINIMUM 144 cfs on 84% of the days for which data is available (daily data available 697 days), would you be surprised.
   YES
   NO

Just may be you should take a look at the data in the attached spreadsheet.

As always commentary and corrections welcome.

Martyn

Notes:

- Point 5. Additionally, for 25% of the days flow was below 20% reduction from the baseline. Less than 10% of days was discharge above the baseline of 152 cfs.
- Point 2 above, although SWFWMD may consider the calculated discharge data from the gage sites 'scientifically defensible' please note;
  - USGS in Atlanta have agreed tois conduct a top level review of this data
  - feedback from acoustic doppler unit installed SE Fork September still awaited

From: Doug Leeper
To: Martyn Johnson (martynellijay@hotmail.com)
Cc: Ron Basso; Mike Heyl
Subject: Response to E-Mails
Date: Friday, January 13, 2012 4:07:00 PM

Hi Martyn:

I'm writing to let you know that I am quite a bit behind in responding to e-mails, but rest assured I expect to soon find time to review and respond to your recent inquiries.

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

From: Alan Martyn Johnson
To: bwr.crrc@tampabay.rr.com; Kevin J Grimsley; R Rodriguez
Cc: Doug Leeper; Marty Kelly; J Weaver
Subject: RE: Chassahowitzka Discharge Jan 2010 thru Dec 2011
Date: Tuesday, January 17, 2012 12:54:04 PM

Brad, Kevin and Mr. Rodriguez,

Brad and Kevin,
Thanks for sharing the various recent e-mails. I only got home late yesterday afternoon and back to the e-mail world.
A few points quickly.

1. I fully share Brad's concerns regarding installation of the gauges at the Chass station. I was with Brad when we viewed these last Saturday. I was amazed to see the units laying on the bottom (in mud/on tree roots) particularly the stage gauges are not secured to a fixed datum point. I did take some photographs but these are difficult to interpret given that it was fairly windy that day. While no expert I think this requires serious on-site review; just maybe some movement of the stage sensor or switching from one to the other gave the 'apparent change' in the data I commented about. What did the PEqup mean in the data set?

   I have some other observations about the reverse flow at the site, but will address those later.
2. Regarding USGS policy not to share the equation for the Chass that you stated has not been changed. Such a positioning does not fall in line with the attempts to have a Working Group to look at these critical spring flows. Where is the spirit of cooperation? It does not make sense that this can be shared with a formal FOIA request but not between members of the Working Group. Kevin, I realize you have to follow policy.
   Mr. Rodriguez: Please share the USGS policy regarding this position.

3. Regarding the acoustic velocity meter in the SE Fork. As I said in an earlier e-mail with over 2500 readings surely some preliminary interpretation/comparison to the calculated flows is possible.
   I note on 10/19 and 10/20 data collection appears to have been turned Off while conducting field measurements. The results comparing calculated flows with measured flows were interesting;

Meas. Number	Date	Time	Measuring Agency	Stream flow (ft^3/s)	Gage Height (ft)	Calc Flow (ft^3/s)	Calc Flow Time	
183	2011-10-20	05:51	USGS	76.2	1.80	64	6:00	119%
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180	2011-10-19	14:18:30	USGS	59.0	2.69	51	14:15	116%
179	2011-10-19	13:46	USGS	59.8	2.73	55	13:45	109%
178	2011-10-19	13:25	USGS	55.8	2.76	46	13:30	121%
177	2011-10-19	12:54:30	USGS	50.6	2.78	50	13:00	101%
176	2011-10-19	12:26:30	USGS	55.8	2.82	49	12:30	114%
175	2011-10-19	11:59	USGS	52.9	2.84	45	12:00	118%
174	2011-10-19	11:25:30	USGS	49.8	2.88	49	11:30	102%
173	2011-10-19	10:51	USGS	43.8	2.92	44	11:00	100%
172	2011-10-19	10:24	USGS	45.2	2.96	52	10:30	87%
171	2011-10-05	11:46:30	USGS	48.8	0.70	63	11:45	77%

170	2011-10-05 11:42:30	USGS	52.6	0.70	63	11:45	83%
169	2011-10-05 11:40	USGS	53.6	0.70	63	11:45	85%
168	2011-10-05 11:36:30	USGS	54.1	0.70	51	11:30	106%

Calculated Flows taken from USGS Real Time Data.

No comments were received about the calculated negative flows and the association with the dS/dt factor in the SE Fork equation being for 30 minutes rather than 15 minutes for the :30 minute data.

Martyn

From: BWR.CRRC@tampabay.rr.com
To: kjgrims@usgs.gov
CC: martynellijay@hotmail.com
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011
Date: Tue, 17 Jan 2012 10:05:03 -0500

Hi Kevin,

Thanks for the quick response. I am aware that the USGS stage-based regression equations for spring flow are empirical in basis and would therefore only be applicable to a specific data set. I am also aware that USGS periodically sends a tech to gather field flow measurements to validate the stage-based regression equations. I will send a formal request USGS FOIA Officer if that is what you prefer.

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Brad W. Rimbey, P.E.

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As always comments and corrections welcome.

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From:	Alan Martyn Johnson
To:	Kevin J Grimsley; Brad Rimley
Cc:	Doug Leeper; Marty Kelly; Ron Basso; R Rodriguez
Subject:	RE: Chassahowitzka Discharge Jan 2010 thru Dec 2011
Date:	Wednesday, January 18, 2012 8:18:20 AM

Kevin,
Chass Gage Site
From the way the cables were routed to the probes it did not appear that the probes had an intended location (fixed supports/housings as SE Fork installation). The probes are not close to the station as shown in the photograph Chass Draft Report by SWFWMD.

SE Fork
Regarding the SE Fork velocity meter, I thought this needed a stage area to be determined and given the bridge supports are practically vertical the stage area should be easily adjusted for stage height.

I will agree the velocity profile across the stream under the Fishbowl Drive bridge does vary considerably with higher velocity on the left bank than the shallower right bank and influenced strongly by the flow changing direction at that point in the river. About a year ago I did some rudimentary checks myself developing a stage area and using a orange/stopwatch to check the velocity and calculate discharge. Crude, old school but effective at demonstrating to me the equation had problems. And yes I did time the orange numerous times and different stage heights.

Presumably the positioning of the velocity meter was to maximize its location relative to the mean velocity location across the stream. I would have thought Doug would appreciate some preliminary feedback as SWFWMD helped fud this installation and are about to issue a new report.

Interesting Observations

1. Recently (last 10 days) the vent just upstream of the bridge (right bank about 10 feet from the bank and 30-40 feet from the bridge) has been discharging strongly at lower stage/tide levels. I sampled water directly from the vent and it has Specific Conductance 5200-5400 on the two occasions I measured it (similar to the higher salinity vents in the main springs). This water stays on the right bank and significantly increases the specific conductance to about 1000 more than the main flow mid stream to left bank. I also have a much better understanding of how the gauge sees higher specific conductance water. Kids bath tub Dots by Cranola make a good alternative to those fancy dye cakes you are no doubt familiar with. Water from the SE Fork flows over the water in the Blue Water area as the stage increases; quite easy to see in the afternoon as the divers/swimmers/manatee have churned up the Blue Water and you can see how it mixes with the clear water from the SE Fork, the dye simply confirmed.
2. The unnamed vent about 15 feet from the right bank directly opposite the McClain residence. The river bed closer to the center of the river from this spring has dropped (collapsed) at least 2 feet in the last couple of months and the flow has decreased to the point that it is now hard to see the 'boil' even at low water. This vent discharges water 1100-1200 microsms as sampled from the vent.

Just thought some people may be interested.

Martyn

To: BWR.CRRC@tampabay.rr.com

Date: Tue, 17 Jan 2012 21:50:29 -0500
From: kjgrims@usgs.gov
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011
CC: martynellijay@hotmail.com

Hi Brad and Martyn,

If the pressure and conductance probes at the Chaz gage are out "laying in the mud" as you've described, then someone (probably a curious bypasser) has removed them from their proper housing and not put them back correctly. This happened a few months ago as well so I wouldn't be surprised if it happened again.

The velocity meter at SE Fork is working fine, but the data won't be meaningful until we've collected a series of corresponding discharge measurements over a full range of conditions. As we've explained at the workshop meetings, that process is likely to take a year and could be more. As soon as we have enough velocity AND corresponding discharge data to develop a relationship, we will make that data available.

We installed a velocity meter at Chaz main several years ago, but there was too much vegetation for it to work correctly. However, several people have noted that the vegetation is far less than it used to be so it might be worth another try. We could provide partial funding for adding a velocity meter at Chaz, but the rest of the funding would have to come from another federal, state, or local government entity.

****
Kevin Grimsley, P.E.
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Tampa, FL 33612
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To: Alan Martyn Johnson
Cc: Brad Rimley; Doug Leeper; Marty Kelly; Ron Basso; R Rodriguez
Subject: RE: Chassahowitzka Discharge Jan 2010 thru Dec 2011
Date: Wednesday, January 18, 2012 9:25:43 AM

Martyn,

The probes at Chaz do have pipes installed to protect them. If they're not in those pipes then someone moved them after our last visit in December.

In addition to the stage/area relationship we also have to develop the mean velocity relationship. We try to install the velocity meter as close to the mean as possible, but we never assume that it's collecting the mean and it almost never does. The "location" of a mean velocity also shifts depending on conditions so it's almost impossible to always collect a true mean velocity from a fixed location. I'm sure that Doug and SWFWMD are aware that every velocity meter we install takes around a year to develop discharge.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

From: Alan Martyn Johnson <martynellijay@hotmail.com>
To: Kevin J Grimsley <kjgrims@usgs.gov>, Brad Rimley <bwr.crrc@tampabay.rr.com>
Cc: Doug Leeper <doug.leeper@swfwmd.state.fl.us>, Marty Kelly <marty.kelly@swfwmd.state.fl.us>, Ron Basso <ron.basso@swfwmd.state.fl.us>, R Rodriguez <rrodrigu@usgs.gov>
Date: 01/18/2012 08:18 AM
Subject: RE: Chassahowitzka Discharge Jan 2010 thru Dec 2011

Kevin,
Chass Gage Site
From the way the cables were routed to the probes it did not appear that the probes had an intended location (fixed supports/housings as SE Fork installation). The probes are not close to the station as shown in the photograph Chass Draft Report by SWFWMD.

SE Fork
Regarding the SE Fork velocity meter, I thought this needed a stage area to be determined and given the bridge supports are practically vertical the stage area should be easily adjusted for stage height.

I will agree the velocity profile across the stream under the Fishbowl Drive bridge does vary considerably with higher velocity on the left bank than the shallower right bank and influenced strongly by the flow changing direction at that point in the river. About a year ago

I did some rudimentary checks myself developing a stage area and using a orange/stopwatch to check the velocity and calculate discharge. Crude, old school but effective at demonstrating to me the equation had problems. And yes I did time the orange numerous times and different stage heights.

Presumably the positioning of the velocity meter was to maximize its location relative to the mean velocity location across the stream. I would have thought Doug would appreciate some preliminary feedback as SWFWMD helped fud this installation and are about to issue a new report.

Interesting Observations

1. Recently (last 10 days) the vent just upstream of the bridge (right bank about 10 feet from the bank and 30-40 feet from the bridge) has been discharging strongly at lower stage/tide levels. I sampled water directly from the vent and it has Specific Conductance 5200-5400 on the two occasions I measured it (similar to the higher salinity vents in the main springs). This water stays on the right bank and significantly increases the specific conductance to about 1000 more than the main flow mid stream to left bank. I also have a much better understanding of how the gauge sees higher specific conductance water. Kids bath tub Dots by Cranola make a good alternative to those fancy dye cakes you are no doubt familiar with. Water from the SE Fork flows over the water in the Blue Water area as the stage increases; quite easy to see in the afternoon as the divers/swimmers/manatee have churned up the Blue Water and you can see how it mixes with the clear water from the SE Fork, the dye simply confirmed.
2. The unnamed vent about 15 feet from the right bank directly opposite the McClain residence. The river bed closer to the center of the river from this spring has dropped (collapsed) at least 2 feet in the last couple of months and the flow has decreased to the point that it is now hard to see the 'boil' even at low water. This vent discharges water 1100-1200 microsms as sampled from the vent.

Just thought some people may be interested.

Martyn

To: BWR.CRRC@tampabay.rr.com
Date: Tue, 17 Jan 2012 21:50:29 -0500
From: kjgrims@usgs.gov
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011
CC: martynellijay@hotmail.com

Hi Brad and Martyn,

If the pressure and conductance probes at the Chaz gage are out "laying in the mud" as you've described, then someone (probably a curious bypasser) has removed them from their proper housing and not put them back correctly. This happened a few months ago as well so I wouldn't be surprised if it happened again.

The velocity meter at SE Fork is working fine, but the data won't be meaningful until we've collected a series of corresponding discharge measurements over a full range of conditions. As we've explained at the workshop meetings, that process is likely to take a year and could be more. As soon as we have enough velocity AND corresponding discharge data to develop a relationship, we will make that data

available.

We installed a velocity meter at Chaz main several years ago, but there was too much vegetation for it to work correctly. However, several people have noted that the vegetation is far less than it used to be so it might be worth another try. We could provide partial funding for adding a velocity meter at Chaz, but the rest of the funding would have to come from another federal, state, or local government entity.

****

Kevin Grimsley, P.E.
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Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064

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On Jan 17, 2012, at 10:05 AM, "Brad Rimbey@CRRC" <BWR.CRRC@tampabay.rr.com> wrote:

Hi Kevin,

Thanks for the quick response. I am aware that the USGS stage-based regression equations for spring flow are empirical in basis and would therefore only be applicable to a specific data set. I am also aware that USGS periodically sends a tech to gather field flow measurements to validate the stage-based regression equations. I will send a formal request USGS FOIA Officer if that is what you prefer.

I recently looked at the USGS pressure, temperature, and conductivity gages for Chaz Main (USGS 02310650). Are you aware that these gages are not rigidly affixed to anything? They are simply laying in the mud at the base of a cypress tree near the Chaz public boat ramp. Considering the sensitivity of the regression equations to tidal stage, it would seem that a rigid mount would be required on at least the pressure gage.

Do you have any information regarding when the ADV meter data will be available from the SE Fork of the Homosassa? I think the ADV meter was installed in September. It seems "provisional" data (as a minimum) should be available to the public by now.

Do you have any idea what it would take to get an ADV meter installed at Chaz Main? The Chaz Main spring pool is currently scheduled to be "dredged" (de-mucked) in April. This project will hopefully have a positive affect on the flow from Chaz Main. I think it would be interesting to get some direct velocity measurements from an ADV meter before and after spring cleanout project. Can you help make this happen?

Brad W. Rimbey, P.E.

----- Original Message -----
From: Kevin J Grimsley
To: Brad Rimbey@CRRC
Cc: Martyn Johnson
Sent: Monday, January 16, 2012 3:01 PM
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011

Hi Brad,

There are several reasons why we don't normally release discharge regression equations such as the

one at Chassahowitzka. In my opinion, the biggest reason is that (as you've noted) the equations are subject to change at any time. We've had past problems where people have reported discharge values as supplied by the USGS while using an outdated equation. This can potentially lead to a lot of confusion and misinformation.

As you know, we're always making new measurements and evaluating our discharge equations. Whenever we feel like we can make a significant improvement in calculating the discharge, we'll update the equation.

We're not trying to be secretive, and if you'd like to make a formal FOIA request you're certainly entitled to that. We're simply trying to avoid confusion from outdated and multiple equations.

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Kevin Grimsley, P.E.
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On Jan 16, 2012, at 9:46 AM, "Brad Rimbey@CRRC" <BWR.CRRC@tampabay.rr.com> wrote:

Hi Kevin,

Thanks for the link to the station on Howard's dock. I am not sure why I could not find it by using the FL map on the USGS waterdata website. Probably not the best way to locate these stations.

I am surprised that USGS does not release the discharge regression equations which are used to predict the spring discharge rates that are published by USGS. Do you know the rationale for the secrecy? Is there some National security issue here? Refusing to release these equations to the public would seemingly be a violation of the Federal Freedom of Information Act and possibly the Florida Public Records statute (119 F.S.) as well.

It does not appear that USGS is currently using the regression equations published in Table 1 of USGS WRI 01-4230 to predict spring discharge rates in Chassahowitzka and Homosassa. Are you able to confirm this?
http://www.swfwmd.state.fl.us/files/database/site_file_sets/1961/Knochnemus_and_Yobbi_2001_-_Hydrology_of_the_coastal_springs_groundwater_basin___.pdf

Would it be more appropriate for me to request the current regression equations from USGS FOIA Officer Davis J Newman at http://www.usgs.gov/foia/ ?

Brad W. Rimbey, P.E.

----- Original Message -----
From: Kevin J Grimsley
To: Brad Rimbey@CRRC
Cc: Brent Whitley ; Dana Bryan ; Doug Leeper ; Al Grubman ; Alan Martyn Johnson ; Marty Kelly ; Norman Hopkins ; rebecca.bays@bocc.citrus.fl.us ; rkane ; Ron Miller ; robert.knight@bocc.citrus.fl.us ; Ron Basso
Sent: Friday, January 13, 2012 3:16 PM
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011

Hi Brad,

Unfortunately, it is our long standing policy that we do not release our discharge regression equations to the public.

The gage at Howard's dock has always been on NWISWeb, station number 02310663. Here's the link - http://waterdata.usgs.gov/fl/nwis/uv/?site_no=02310663&PARAmeter_cd=00065,00060

****
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From: "Brad Rimbey@CRRC" <BWR.CRRC@tampabay.rr.com>
To: "Alan Martyn Johnson" <martynellijay@hotmail.com>, "Kevin J Grimsley" <kjgrims@usgs.gov>
Cc: "Brent Whitley" <brentwhitley@sierra-properties.com>, "Dana Bryan" <dana.bryan@dep.state.fl.us>, "Doug Leeper" <doug.leeper@swfwmd.state.fl.us>, "Al Grubman" <grubman1@gmail.com>, "J Weaver" <jdweaver@usgs.gov>, "Marty Kelly" <marty.kelly@swfwmd.state.fl.us>, "Norman Hopkins" <norman@amyhrf.org>, <rebecca.bays@bocc.citrus.fl.us>, "rkane" <rkane@usgs.gov>, "Ron Miller" <rmille76@tampabay.rr.com>, <robert.knight@bocc.citrus.fl.us>, "Ron Basso" <ron.basso@swfwmd.state.fl.us>, "R Rodriguez" <rrodrigu@usgs.gov>
Date: 01/12/2012 05:31 PM
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011

Hi Kevin,

Could you please provide the equation used to calculate the discharge at station 02310650 along with an explanation of any variables (and their source) used in the equation?

Also, I was at Howard Bryant's dock yestersday on the Chaz. USGS has been maintaining a gauge station on that dock for several years. It appears that USGS is doing this under contract for SWFWMD. The SWFWMD SID is 20025 (survey control FLO 2761). The gauge station appears to have full telemetry but none of the data is available on the USGS real-time website http://waterdata.usgs.gov/fl/nwis/rt. Could you please provide a link to that data?

Thanks,

Brad W. Rimbey, P.E.
----- Original Message -----
From: Kevin J Grimsley
To: Alan Martyn Johnson
Cc: Brent Whitley ; Brad Rimbey ; Dana Bryan ; Doug Leeper ; Al Grubman ; J Weaver ; Marty Kelly ; Norman Hopkins ; rebecca.bays@bocc.citrus.fl.us ; rkane ; Ron Miller ; robert.knight@bocc.citrus.fl.us ; Ron Basso ; R Rodriguez
Sent: Thursday, January 12, 2012 1:57 PM
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011

The equation used to calculate discharge at station 02310650 was not changed in August 2011 or at

any other time over the past several years.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
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From: Alan Martyn Johnson <martynellijay@hotmail.com>
To: Doug Leeper <doug.leeper@swfwmd.state.fl.us>, Marty Kelly <marty.kelly@swfwmd.state.fl.us>, Ron Basso <ron.basso@swfwmd.state.fl.us>, Ron Miller <rmille76@tampabay.rr.com>, Al Grubman <grubman1@gmail.com>, Brad Rimbey <brimbey3@tampabay.rr.com>, Norman Hopkins <norman@amyhrf.org>, Brent Whitley <brentwhitley@sierra-properties.com>, Dana Bryan <dana.bryan@dep.state.fl.us>, Kevin J Grimsley <kjgrims@usgs.gov>, rkane <rkane@usgs.gov>, R Rodriguez <rrodrigu@usgs.gov>, J Weaver <jdweaver@usgs.gov>, <robert.knight@bocc.citrus.fl.us>, <rebecca.bays@bocc.citrus.fl.us>
Date: 01/12/2012 12:33 PM
Subject: Chassahowitzka Discharge Jan 2010 thru Dec 2011

A few days ago I shared some data regarding discharge for the Homosassa River system.

Although I have not been as involved with the Chassahowitzka I took the time to look at the last two years data for Chassahowitzka in the same way.

The Executive Summary of the Chassahowitzka November 2010 Draft Report states:

- The median flow of the Chassahowitzka River based on estimated and measured flows for the baseline period (1967-2007) used for determination of the minimum flows recommended in this report was 63 cubic feet per second (cfs).
- Therefore, it is recommended that the minimum flow for the Chassahowitzka River system (including all contributing springs and associated creeks) be maintained at 89 percent of the baseline flow.

The attached spreadsheet shows the daily mean discharge data as reported by USGS for the Chassahowitzka Gage Site 02310650 from Jan 1, 2010 thru Dec 31, 2011. For days on which mean discharge is reported (712 days) 46% of the days were at or below the recommended MFL and only 10% of the days was flow above the baseline.

When reviewing this data I recalled a question I asked late August 2011 about the equation used to calculate the discharge for the Chass as the equation in the Yobbi and Knochenmus Report did not match the reported results.

I was told the USGS does not share the equations.

In the spreadsheet you will note for 08/13/2011 thru 08/18/2011 the entries are P Eqp .

Although in no way conclusive, it is possible that someone made a change in the equation used to calculate discharge in mid August 2011.

So, I compared reported data before and after 08/13/2011. The data is in the spreadsheet; before 52% of the days discharge was at/below the recommended MFL after it was 16%. Similarly, for days discharge was at/above the base line 7% before and 28% after.

A part of these higher calculated discharges are due to levels in the Weeki Wachee well being slightly higher during the latter months of 2011; particularly October 2011. This is also evident in the Homosassa data shared the other day, but the figures for the Chassahowitzka are much more than appears to be related to Weeki Wachee well levels alone.

This deserves comment/explanation from SWFWMD/USGS.

The point of this e-mail is to draw attention to the fact the calculated discharge into the Chassahowitzka has frequently been below the recommended MFL during the last two years. The data source is the same as used to develop the recommended minimum flow which results in significant harm.

As always comments and corrections welcome.

Martyn[attachment "Chass Discharge Jan 2010 Dec 2011.xls" deleted by Kevin J Grimsley/WRD/USGS/DOI]

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2012.0.1901 / Virus Database: 2109/4737 - Release Date: 01/11/12

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From: Kevin J Grimsley
To: Alan Martyn Johnson
Cc: bwr.crrc@tampabay.rr.com; Doug Leeper; Marty Kelly
Subject: RE: Chassahowitzka Discharge Jan 2010 thru Dec 2011
Date: Wednesday, January 18, 2012 12:10:55 PM

Martyn,

1) Just so everyone else in this thread knows, I have explained in a separate email how we do have a mount for the probes at Chaz and it appears they've been removed by a curios passer-by. The "P" flag is to mark the data as provisional. The "Eqp" flag indicates that the data was blocked from being released due to an equipment error.

2) We gladly and voluntarily participated in the Springs Coast MFL working group to help educate the public and stakeholders about what we do and how we do it. To be clear, we're not withholding information that can simply be retrieved through a FOIA request. We believe that a FOIA request would not apply to these equations because they are interpretive in nature. The data that we collect and the discharge values that we calculate are always completely open to the public. Equations and "ratings" change all the time. If you want to know the discharge for the Chassahowitzka River, or any other river that we gage, our data is always available through NWISWeb.

Mr. Rodriguez asked me to respond to your question about our policy. As far as I know, there is not an overall USGS policy on releasing discharge equations. It is left up to the discretion of each state's Science Center. I can honestly tell you that this policy has been in effect for longer than I've been around. I can also say that when I worked for the Louisiana Water Science Center, we had the same policy.

3) As I explained in previous emails, it will take a year or possibly more to begin getting discharge from the velocity meter installed at SE Fork.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
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From: Alan Martyn Johnson <martynellijay@hotmail.com>
To: <bwr.crrc@tampabay.rr.com>, Kevin J Grimsley <kjgrims@usgs.gov>, R Rodriguez <rrodrigu@usgs.gov>
Cc: Doug Leeper <doug.leeper@swfwmd.state.fl.us>, Marty Kelly <marty.kelly@swfwmd.state.fl.us>, J Weaver <jdweaver@usgs.gov>
Date: 01/17/2012 12:53 PM
Subject: RE: Chassahowitzka Discharge Jan 2010 thru Dec 2011

Brad, Kevin and Mr. Rodriguez,

Brad and Kevin,

Thanks for sharing the various recent e-mails. I only got home late yesterday afternoon and back to the e-mail world.
A few points quickly.

1. I fully share Brad's concerns regarding installation of the gauges at the Chass station. I was with Brad when we viewed these last Saturday. I was amazed to see the units laying on the bottom (in mud/on tree roots) particularly the stage gauges are not secured to a fixed datum point. I did take some photographs but these are difficult to interpret given that it was fairly windy that day. While no expert I think this requires serious on-site review; just maybe some movement of the stage sensor or switching from one to the other gave the 'apparent change' in the data I commented about. What did the PEqup mean in the data set?

I have some other observations about the reverse flow at the site, but will address those later.
2. Regarding USGS policy not to share the equation for the Chass that you stated has not been changed. Such a positioning does not fall in line with the attempts to have a Working Group to look at these critical spring flows. Where is the spirit of cooperation? It does not make sense that this can be shared with a formal FOIA request but not between members of the Working Group. Kevin, I realize you have to follow policy.
Mr. Rodriguez: Please share the USGS policy regarding this position.

3. Regarding the acoustic velocity meter in the SE Fork. As I said in an earlier e-mail with over 2500 readings surely some preliminary interpretation/comparison to the calculated flows is possible.
I note on 10/19 and 10/20 data collection appears to have been turned Off while conducting field measurements. The results comparing calculated flows with measured flows were interesting;

Meas. Number	Date Time	Measuring Agency	Stream flow (ft^3/s)	Gage Height (ft)	Calc Flow (ft^3/s)	Calc Flow Time	
183	2011-10-20 05:51	USGS	76.2	1.80	64	6:00	119%
182	2011-10-20 05:24	USGS	75.4	1.85	59	5:30	128%
181	2011-10-19 14:46:30	USGS	68.2	2.64	51	14:45	134%
180	2011-10-19 14:18:30	USGS	59.0	2.69	51	14:15	116%
179	2011-10-19 13:46	USGS	59.8	2.73	55	13:45	109%
178	2011-10-19 13:25	USGS	55.8	2.76	46	13:30	121%
177	2011-10-19 12:54:30	USGS	50.6	2.78	50	13:00	101%
176	2011-10-19 12:26:30	USGS	55.8	2.82	49	12:30	114%
175	2011-10-19 11:59	USGS	52.9	2.84	45	12:00	118%
174	2011-10-19 11:25:30	USGS	49.8	2.88	49	11:30	102%
173	2011-10-19 10:51	USGS	43.8	2.92	44	11:00	100%
172	2011-10-19 10:24	USGS	45.2	2.96	52	10:30	87%
171	2011-10-05 11:46:30	USGS	48.8	0.70	63	11:45	77%
170	2011-10-05 11:42:30	USGS	52.6	0.70	63	11:45	83%
169	2011-10-05 11:40	USGS	53.6	0.70	63	11:45	85%
168	2011-10-05 11:36:30	USGS	54.1	0.70	51	11:30	106%

Calculated Flows taken from USGS Real Time Data.

No comments were received about the calculated negative flows and the association with the dS/dt factor in the SE Fork equation being for 30 minutes rather than 15 minutes for the :30 minute data.

Martyn

From: BWR.CRRC@tampabay.rr.com
To: kjgrims@usgs.gov
CC: martynellijay@hotmail.com
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011
Date: Tue, 17 Jan 2012 10:05:03 -0500

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Cc: Martyn Johnson
Sent: Monday, January 16, 2012 3:01 PM
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To: "Alan Martyn Johnson" <martynellijay@hotmail.com>, "Kevin J Grimsley" <kjgrims@usgs.gov>
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Date: 01/12/2012 05:31 PM
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011

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Thanks,

Brad W. Rimbey, P.E.
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From: Kevin J Grimsley
To: Alan Martyn Johnson
Cc: Brent Whitley ; Brad Rimbey ; Dana Bryan ; Doug Leeper ; Al Grubman ; J Weaver ; Marty Kelly ; Norman Hopkins ; rebecca.bays@bocc.citrus.fl.us ; rkane ; Ron Miller ; robert.knight@bocc.citrus.fl.us ; Ron Basso ; R Rodriguez
Sent: Thursday, January 12, 2012 1:57 PM
Subject: Re: Chassahowitzka Discharge Jan 2010 thru Dec 2011

The equation used to calculate discharge at station 02310650 was not changed in August 2011 or at any other time over the past several years.

****
Kevin Grimsley, P.E.
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USGS, Florida Water Science Center
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kjgrims@usgs.gov
813-498-5064
****

From: Alan Martyn Johnson <martynellijay@hotmail.com>

To: Doug Leeper <doug.leeper@swfwmd.state.fl.us>, Marty Kelly <marty.kelly@swfwmd.state.fl.us>, Ron Basso <ron.basso@swfwmd.state.fl.us>, Ron Miller <rmille76@tampabay.rr.com>, Al Grubman <grubman1@gmail.com>, Brad Rimbey <brimbey3@tampabay.rr.com>, Norman Hopkins <norman@amyhrf.org>, Brent Whitley <brentwhitley@sierra-properties.com>, Dana Bryan <dana.bryan@dep.state.fl.us>, Kevin J Grimsley <kjgrims@usgs.gov>, rkane <rkane@usgs.gov>, R Rodriguez <rrodrigu@usgs.gov>, J Weaver <jdweaver@usgs.gov>, <robert.knight@bocc.citrus.fl.us>, <rebecca.bays@bocc.citrus.fl.us>

Date: 01/12/2012 12:33 PM

Subject: Chassahowitzka Discharge Jan 2010 thru Dec 2011

A few days ago I shared some data regarding discharge for the Homosassa River system.

Although I have not been as involved with the Chassahowitzka I took the time to look at the last two years data for Chassahowitzka in the same way.

The Executive Summary of the Chassahowitzka November 2010 Draft Report states:

- The median flow of the Chassahowitzka River based on estimated and measured flows for the baseline period (1967-2007) used for determination of the minimum flows recommended in this report was 63 cubic feet per second (cfs).
- Therefore, it is recommended that the minimum flow for the Chassahowitzka River system (including all contributing springs and associated creeks) be maintained at 89 percent of the baseline flow.

The attached spreadsheet shows the daily mean discharge data as reported by USGS for the Chassahowitzka Gage Site 02310650 from Jan 1, 2010 thru Dec 31, 2011. For days on which mean discharge is reported (712 days) 46% of the days were at or below the recommended MFL and only 10% of the days was flow above the baseline.

When reviewing this data I recalled a question I asked late August 2011 about the equation used to calculate the discharge for the Chass as the equation in the Yobbi and Knochenmus Report did not match the reported results.

I was told the USGS does not share the equations.

In the spreadsheet you will note for 08/13/2011 thru 08/18/2011 the entries are P Eqp .

Although in no way conclusive, it is possible that someone made a change in the equation used to calculate discharge in mid August 2011.

So, I compared reported data before and after 08/13/2011. The data is in the spreadsheet; before 52% of the days discharge was at/below the recommended MFL after it was 16%. Similarly, for days discharge was at/above the base line 7% before and 28% after.

A part of these higher calculated discharges are due to levels in the Weeki Wachee well being slightly higher during the latter months of 2011; particularly October 2011. This is also evident in the Homosassa data shared the other day, but the figures for the Chassahowitzka are much more than appears to be related to Weeki Wachee well levels alone.

This deserves comment/explanation from SWFWMD/USGS.

The point of this e-mail is to draw attention to the fact the calculated discharge into the Chassahowitzka has frequently been below the recommended MFL during the last two years. The data source is the same as used to develop the recommended minimum flow which results in significant harm.

As always comments and corrections welcome.

Martyn[attachment "Chass Discharge Jan 2010 Dec 2011.xls" deleted by Kevin J Grimsley/WRD/USGS/DOI]
No virus found in this message.
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Version: 2012.0.1901 / Virus Database: 2109/4737 - Release Date: 01/11/12

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Checked by AVG - www.avg.com
Version: 2012.0.1901 / Virus Database: 2109/4737 - Release Date: 01/11/12

From:	Ron Basso
To:	Alan Martyn Johnson; Doug Leeper
Cc:	Ron Miller; Al Grubman; Brad Rimbey; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley; Paul Williams; Claire E. Muirhead
Subject:	RE: Homosassa MFL"s
Date:	Wednesday, January 18, 2012 11:34:16 AM
Attachments:	2011_12_WCP_total.xlsx

Mr. Johnson:

I've completed your request regarding the number of well construction permits issued in the six-county region of our Northern District over the last year (January 1, 2011 to January 1, 2012). I have attached the information in an excel file for your review. We are still researching the number of water use permits (new, modifications, or renewals) issued over the last year in the same region.

The well construction permit data indicates that there were 715 small diameter wells (less than 6 inches diameter) completed over the six-county region during the last year. These include wells installed for domestic self-supply, household irrigation wells, and livestock watering wells. As I mentioned in my earlier email, these wells do not meet our water use permit threshold and are exempt from those permitting requirements. A driller only needs to obtain a well construction permit to install these wells. We do not regulate them. However, their use is quite small. If we assume a use of 500 gallons per day (gpd) per well, the total water use for all 715 wells is only 357,500 gpd. This amounts to less than one-half of one percent of all groundwater withdrawn in the six-county region.

Only 9 larger diameter wells (6 inches well diameter or greater) were installed in the six-county region over the last year. These wells are part of a water use permit and they're use is regulated by the District. If you have any questions, please do not hesitate to contact me.

Ron Basso, P.G.
Senior Professional Geologist
Hydrologic Evaluation Section
Southwest Florida Water Management District
ph 1-800-423-1476 (in state)
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From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Tuesday, January 03, 2012 1:00 PM
To: Doug Leeper
Cc: Ron Miller; Al Grubman; Brad Rimbey; Ron Basso; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject: Homosassa MFL's

Doug,
It has been some 15 months since you started a process seeking public input regarding the MFL's for the Homosassa River. In a series of public meetings and forming a working group you have heard from members of the public and various stakeholder representatives. In the meetings Chassahowitzka, Crystal River and the Homosassa were involved. The question now is how will all this be incorporated in what is presented to the SWFWMD Board regarding the Chassahowitzka and Homosassa Rivers. I have heard comments about some of the older flow data being incorporated in the report, but it will not influence the data used in the 'all controlling' Northern District Model. I have heard that all the e-mails letters and presentations will be in 'appendices', but I doubt the Board will read these. So what will be presented?

Will a revised draft report or final report be published prior to presentation to the Board?
Will public input regarding major increase in barnacle growth as evidence of harm be included?
Will some preliminary analysis of acoustic doppler flow data SE Fork be included?
Will the USGS review of flow measurements/methodology in the Homosassa be mentioned?

In the Executive Summary page 20 of the July 12, 2010 Peer-Review Draft the wording includes:

Estimated combined discharge past United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River has averaged 152 cubic feet per second (cfs) for the period from 1995 through 2009
…….
Declines in flow to the system associated with groundwater withdrawals were estimated to be approximately 2.3 cfs, including a 1 cfs decline in the springs contributing to flow past the USGS gages in the Homosassa Main Springs run and Southeast Fork. This 1 cfs change in flow was considered insignificant as compared to the estimated average flow of 152 cfs for the two sites, so available flow records for the sites were considered representative of baseline conditions for evaluation of minimum flow criteria. Because break-points in ecological responses were not observed, a fifteen percent loss of resource or habitat was adopted as representative of significant harm.
The most sensitive resource responses to modeled flow reductions were exhibited by fish and invertebrate plankton and nekton, i.e., free-floating and actively swimming organisms. Flow reductions of 2.7 percent or less from median baseline conditions were associated with fifteen percent reductions in predicted abundances of individual pseudo-species or taxa. Similar or increased sensitivity to flow reductions was predicted for many taxa across the range of baseline flows, in particular for baseline flows less than the median flows.
……
Modeled responses of a number of salinity-based habitats in the Homosassa River main channel were also relatively sensitive to flow reductions. Flow reductions of less than five percent were associated with more than fifteen percent reductions in selected salinity-based habitats determined from isohalines with salinities of 2, 3, 5 and 12.
……
Based on review of resource and habitat-based criteria, the recommended minimum flows for the Homosassa River system are defined as a five percent reduction from baseline flows. Given the minimal existing withdrawal impacts on flow, the recommended minimum flows are a five percent reduction from combined flows measured on a daily basis at the USGS gauge sites in the Homosassa Springs run and Southeast Fork of the Homosassa River.

Reminder: Few believe the 2.3 cfs is an accurate reflection of groundwater withdrawal reduction.

I am hoping that a 'new' Executive Summary will rely less on estimates to develop a defined answer.

Hopefully, through all the meetings/discussion we better recognize the legal requirement to set MFL's was a good concept when it was first enacted. To truly protect the future, minimum levels in the aquifer controlled by strict limits on groundwater withdrawals may be much more effective as a proactive approach for protecting Outstanding Florida Waters along the Spring Coast and all the economic activities which rely on water as a resource.

DECEMBER 13 Memo
Thanks to all who put the efforts into documenting and responding to the October workshop. I have read the December 13 memo posted on the web site. I have a number of comments and questions. For ease of reference I have numbered them.

1. **Semantics over shadow the real issues and cloud the facts.**

December 13 Memo page 4

Staff also notes that a strict definition of "mining groundwater" is where groundwater withdrawals exceed annual recharge to the aquifer, and based on this definition, there is no "mining" of groundwater in the Northern District. In the spring's coast groundwater basin, average recharge to the Upper Floridan aquifer is about 14 inches per year, while current groundwater withdrawals are approximately one inch per year.

Where does this strict definition come from? From my search it does not appear to have made it to the web yet. Sucking water out of the aquifer using power pumps sure sounds like a form of mining which is; *removing minerals* (resources) *from the ground, the process or business of removing minerals* (resources) *from the ground*. Semantics water is not a mineral, but it certainly is a valuable resource for which the equilibrium is moving in the wrong direction.

The facts in the statement. Over 7% of the water making it into the aquifer is being pumped out. This is 7% that does not provide the driving force to push water through the ground to the springs.
No pumping is equilibrium.
Looking at the often quoted Weeki Wachee Well it is clear that the water table has been declining. Similar is true for the Lecanto well mentioned in the July 2010 report.

Graph of DAILY Elevation above NGVD 1929, feet, ,Tampa DCP data

NOTE: IF THE USGS GRAPH DOES NOT COPY INTO THE E-MAIL; it is the presentation quality graph of daily data on the USGS web site for Weeki Wachee Well 1970-present..

Can the decline in well level all be attributed to rainfall? Take 2003 and 2004, both years saw high rainfall due to hurricanes and the water table increased to over 23 feet both years, but look how quickly the levels dropped to just over 16 feet. Compare that drop to what happened in the early 80's. Was spring flow lower in the 80's so the water table dropped more slowly? Or, could increased groundwater withdrawals be the difference?

It is always so easy to get apples and oranges mixed, but where do the 14 and 1 inch come from.
Specifically in the quote from page 4, the origin of the *average* 14 inches recharge is not referenced and similarly for the *current* one inch associated with withdrawals.
Appreciated this data may be combined from a number reports.

Looking in the Homosassa reviews, recharge is not mentioned in the July 12, 2010 Draft Review.
In the Appendices to the Review it is stated (page 338 of the pdf file under 2.0 Hydrogeologic Conditions):
The highest recharge rates to the UFA occur in west-central Hernando and Citrus Counties with values ranging between 10 and 25 inches per year (Sepulveda, 2002).
And further (on page 340):

The United States Geological Survey (USGS) developed a water budget for the basin for calendar years 1997 and 1998 (Knochenmus and Yobbi, 2001). According to Knochenmus and Yobbi's calculations, average annual values for the following water budget components were:
Rainfall = 52 inches (in)/yr,
Evapotranspiration = 32 in/yr,
Springflow = 12.5 in/yr,
Groundwater Withdrawals = 0.6 in/yr,
Groundwater Outflow = 6.7 in/yr and
Change in Storage = 0.2 in/yr
Based on the USGS water budget, net recharge to the UFA averaged 20 in/yr for the two-year period. As a percentage of recharge, groundwater withdrawals averaged about three percent of annual recharge.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

2. **Groundwater Withdrawals**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

Something does not seem to add up. Early 2011 the following was a response to a question about new wells:
"Review of the District's Well Construction Database indicates that 213 and 941 permits were issued for withdrawals in Citrus County during the past year and past three years, respectively."……"With regard to water-use permitting……. Fewer than ten of the hundreds of surface- and groundwater use permit requests received by the Brooksville Regulation Department during the past three years were not issued.
Note that this department of the District handles water use permitting for withdrawals in the northern portion of the District, which includes Citrus County, Hernando County, Pasco County, Sumter County, and portions of Lake, Levy and Marion counties."

QUESTION A: **WITH ALL THESE NEW WELLS AND WATER USE PERMITS HOW CAN CONSUMPTION HAVE DECLINED/REMAINED FLAT?** Some data to support the statement would be useful.

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

3. **Rainfall; the giver or the excuse.**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

December 13 Memo page 20

Staff acknowledges Mr. Miller's comments and notes that minimum flows and levels do, in effect, serve to establish a limit or cap beyond which further water withdrawals would be significantly harmful to area water resources and ecology. Once incorporated into District rules, minimum flows and levels become one criterion used in the evaluation of requests for water use permits. Similarly, minimum flows and levels help identify withdrawal limits that are incorporated into water supply planning efforts.

December 13 Memo page 25

Staff acknowledges Mr. Johnson's comments but does not support a five-year moratorium on the issuance or renewal of water use permits for area groundwater withdrawals. Staff does support the careful evaluation of all future renewals or issuances of water use permits in the Springs Coast area and elsewhere in the District.

Actions Speak Louder Than Words.
Sooner or later it will be recognized water management must deal with the rainfall as it occurs. Rainfall is income, you have to deal with the income you have this year.

The growers who tonight (January 3, 2012) will spray tremendous quantities of water from the aquifer on their crops are drawing from limited resources. It appears later rather than sooner attention will be paid to limiting water withdrawals; but for right now water use permits are issued to anyone who submits the correct paperwork. Moreover, when the circumstances are 'such'(like tonight's freeze) the limits will be waived….this highly probable for MFL's also The information regarding well construction and water use permits requested earlier combined with declines at wells in the area over the next few days will help validate if actions speak louder than words.

4, Discharge Measurements

December 13 Memo page 24 and 25

Staff notes that Mr. Grimsley addressed Mr. Johnson's questions about the ongoing efforts related to measurement of discharge in the Southeast Fork of the Homosassa River during the October workshop.

Response: Mr. Kevin Grimsley, with the United States Geological Survey, noted that equipment used to measure water velocities was installed at the Southeast Fork gage site in September and that negative velocities were recorded at the site last week as a meteorological front passed through the area. Mr. Grimsley added that it would be approximately six months to one year before sufficient data have been obtained for development of a velocity index rating curve for the gage site.

The USGS real time data indicates data from the acoustic doppler flow measuring equipment was operational early September with data collected at 15 minutes past each hour, 24 readings each day. With over 2500 readings some preliminary indication of how this equipment correlates with the calculated discharge data must be possible. The equations for the calculated data were developed by regression analysis of far less data than 2500 measurements.
It is noteworthy that since installation of the acoustic doppler unit, calculated data at the 30 minutes past the hour intervals is being calculated using a dS/dt(change in stage height) component in the formula for 30 minutes rather than for 15 minutes.
At 05:30 on October 19, 2011 the calculated figure was -0.27 cfs; this was calculated using a stage height change of 0.1 (2.67 to 2.77) multiplied by the equation constant of 418.14 or a contribution of -41.8 cfs the next two calculated reading were at 05:45 am of 20 cfs (stage change 2.77 to 2.82) and 06:00 am of 20 cfs (stage change 2.82 to 2.87) both these stage changes result in contribution of -20.91 cfs. Realizing this is more detail than most of you need lets just say this was/is not the only occurrence. Presumably this difference in calcultion will be addressed when the data approval process takes place.

Date/Time	Calculated Discharge	Stage Change
10/19 05:30	-0.27 cfs	0,1
10/27 02:30	-1.1 cfs	0,14
11/22 14:30	-3.0 cfs	0.14
11/27 03:30	-0.17cfs	0.13
11/28 03:30	-3.8 cfs	0.13

On October 19/20, 2011 USGS conducted Field Measurements Acoustic Doppler data collection was suspended from 08:30 until 15:30 allowing 15 minute dS/dt calculated component to be reported. Calculated versus field measurement discharge is shown in the following table.

Number	Date	Time	Stream flow (ft^3/s)	Calculated Flow Real Time Data (ft^3/s)	
180	2011-10-20	05:51	76.2	64	84%
179	2011-10-20	05:24	75.4	59	78%
178	2011-10-19	14:46:30	68.2	51	75%
177	2011-10-19	14:18:30	59.0	51	86%
176	2011-10-19	13:46	59.8	55	92%
175	2011-10-19	13:25	55.8	46	82%
174	2011-10-19	12:54:30	50.6	50	99%
173	2011-10-19	12:26:30	55.8	49	88%

172	2011-10-19 11:59	52.9	45	85%
171	2011-10-19 11:25:30	49.8	49	98%
170	2011-10-19 10:51	43.8	44	100%
169	2011-10-19 10:24	45.2	52	115%

SUMMARY/CONCLUSION

With over 15 months of review the difference between estimated data and a defined MFL should be better understood. Also, the methods by with measurement/monitor compliance will be handled should be more confidently understood and scientifically verifiable.

Protecting and managing a resource as valuable as water to the future economy of the Springs Coast and the ecology of Outstanding Florida Waters in the area is a responsibility that will be assessed in the future. May be if some of the long term residents are respected when they say harm is already evident in the Homosassa River (major increase in barnacle growth, reduced fish population and noticeable flow reductions) the task will be easier.

From:	Alan Martyn Johnson
To:	Doug Leeper; Al Grubman (grubman1@gmail.com); Bill Geiger (bgeiger@cityofbrooksville.us); Bill Pouder (bill.pouder@myfwc.com); Boyd Blihovde (Boyd_Blihovde@fws.gov); Brad Rimbey (BWR.CRRC@tampabay.rr.com); Brent Whitley (brentwhitley@sierra-properties.com); Brockway, Alys (abrockway@co.hernando.fl.us); Dennis D. Dutcher (Dennis3ds@aol.com); Frank DiGiovanni (administration@inverness-fl.gov); Greenwood, Kathleen (Kathleen.Greenwood@dep.state.fl.us); Helen Spive; Hilliard, Dan (2buntings@comcast.net); Hoehn, Ted; Hope Corona (hopecorona@tampabay.rr.com); Jim Farley (jfarley682@aol.com); Katie Tripp (ktripp@savethemanatee.org); Norman Hopkins (norman@amyhrf.org); Rebecca Bays (rebecca.bays@bocc.citrus.fl.us); Richard Kane (rkane@usgs.gov); Richard Radacky (rradacky@cityofbrooksville.us); Ron Miller (rmille76@tampabay.rr.com); Sarah Tenison (cityofweekiwachee@yahoo.com); Sulllivan, Jack (jsullivan@carltonfields.com); Voyles, Carolyn (Carolyn.Voyles@dep.state.fl.us); Whitey Markle (whmarkle@gmail.com); (janicehowie@aol.com); Abdon Sidibie (asidibie@chronicle.online.com); Alex McPherson (aamcpherson@msn.com); Ann - 2 Hodgson (ahodgson@gmail.com); Ann Hodgson (ahodgson@audubon.org); Bernard Berauer (bfberauer@aol.com); Beverly Overa (boverly@tampabay.rr.com); Bill Garvin (wgarvin@tampabay.rr.com); Bob Caldwell (Bobcaldwell51@yahoo.com); Brack Barker (brack154@msn.com); Carl Mattthai (thebabesmimi@gmail.com); Casey, Emily (fcnwr@atlantic.net); Charles Dean (dean.charles.web@flsenate.gov); Charles Stonerock (katcha.stonerock3@gmail.com); Chris Safos (chrissafos@embarqmail.com); Czerwinski, Mike (mczerwin@tampabay.rr.com); Darlene Herth (2cetechnology21@gmail.com); Darrell Snedecor (president@citruscountyaudubon.com); Don Hiers (dhiers3@gmail.com); Douglas Dame (doug_dame@yahoo.com); Elaine Luther (barneyandcap@hotmail.com); Emily Casey (ecasey21@hotmail.com); Emma Knight (eknight@wetlandsolutionsinc.com); George Harbin (gharbin@tampabay.rr.com); George McClog (classof47@gmail.com); Gorgon O"Connor (gorgon_o@yahoo.com); Harry Steiner (harry109@aol.com); Jack Calbeck (calbeckj@citrus.k12.fl.us); jane Perrin (jcsperrinmd@sbcglobal.net); Jerry Morton (JerrMorton@aol.com); Jessie Gourlie (gourliej@thirdplanetwind.com); Jim Collins (jimmiekey22@yahoo.com); Jimmie Smith (Jimmie.Smith@myfloridahouse.gov); Joe Calamari; John Lord (jclord109@yahoo.com); John Mayo (freedomway1@gmail.com); Karen Johnstone (kjohns213@sbcglobal.net); Kim Caldwell (caldwell.kimberly@yahoo.com); Kim Dinkins (kim.dinkins@marioncountyfl.org); Linda Pierce (tpierce35@tampabay.rr.com); Linda Vanderveen (hernandoaudubon@yahoo.com); Mary Anne Lynn (mlynn1978@tampabay.rr.com); Matthew Corona (mcorona1@tampabay.rr.com); Max Rhinesmith (rhinesmith@webtv.net); Amber Breland; Andy Houston (ahouston@crystalriverfl.org); Art Yerian (Al.Yerian@dep.state.fl.us); Ben Weiss; Beth Hovinde; Brad Thorpe (brad.thorpe@bocc.citrus.fl.us); Courtney Edwards (cedwards@savethemanatee.org); Dale Jones (Jones@MyFWC.com); Dana Bryan (dana.bryan@dep.state.fl.us); Darrell Snedecor; David Hamilton (countyadministrator@hernandocounty.us); David Hankla (david_hankla@fws.gov); Don Wright (wright@sura.org); Dusty McDevitt (mcdevitt@usgs.gov); Ed Call (marvin.call@MyFWC.com); Eric Nagid (eric.nagid@MyFWC.com); FFWCC MFLs Review E-Mail Address (fwcconservationplanningservices@myfwc.com); J. J. Kenney (jj.kenney@bocc.citrus.fl.us); Jennene Norman-Vacha (jnvacha@ci.brooksville.fl.us); Joyce_Kleen@fws.gov; Kandi Harper (kandi.harper@bocc.citrus.fl.us); Keith Ramos (Keith.Ramos@fws.gov); Kent Smith (kent.smith2@myfwc.com); Kevin Grimsley (kjgrims@usgs.gov); Michael Lusk (Michael_Lusk@fws.gov); Mitchell Newberger (mnewberger@verizon.net); Nick Robbins (Nick.Robbins@dep.state.fl.us); Nicole Adimey (Nicole_Adimey@fws.gov); Paul Thomas (paulw.thomas@MyFWC.com); Ron Mezich (ron.mezich@MyFWC.com); Shelly Yaun (shelly.yaun@dep.state.fl.us); Toby Brewer (Toby.Brewer@dep.state.fl.us); Tracy Colson; Wallace, Traci; Adkins, Jim; Bitter, Jim; Bryant, Richard; Cantero, Vince; Carpenter, Paul; Daniels, Chase; Dueker, Duane; Gramling, Hugh; Harrelson, Cathy; Hubbell, Pete; Johnson, Eric; Keim, Robert; Kincaid, Todd; Kline, Allen; Knight, Bob; Knight, Robert; Knudson, Ross; Overa, Tom; Owen, Rick; Parrow, Liz; Rolf Auermann (rauerman@tampabay.rr.com); Rusnak, Teddi; Tarochinoe, Joseph; Watkins, Priscilla; Watrous, Russell; Wilson, Roger
Cc:	Amy K. Harroun; Barbara Matrone; Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Gary E. Williams; Jay Yingling; Karen Lloyd; Ken Weber; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject:	RE: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES
Date:	Thursday, January 19, 2012 7:38:54 PM
Attachments:	M_Johnson_2012_01_12_response[1].pdf

Please note the words in Doug's e-mail I have made red lettering and yellow highlight.

If you are concerned about the future of Homosassa, Chassahowitzka, Crystal or any other spring fed river in the SWFWMD this is ESSENTIAL READING.

Baseline flows will be no more if a draft rule is approved, at least as I read this response from SWFWMD (key part copied into this message).

The gap in the quote is a graph which does not copy into the e-mail text so go to the attachment for the complete response.
Yellow hightlight added.

QUOTE
Dear Mr. Johnson –
Doug Leeper has asked that I respond to your recent comments (January 12, 2012 e-mail) about flows in the Chassahowitzka River and the application of the proposed minimum flows and levels (MFL) for the river system. The proposed Chassahowitzka MFL is a percentage of flow, not a fixed number and is not directly related to a long-term median. The MFL is a percent of flow and the actual withdrawal varies with the flow, not a historic median. As discussed later, the 63 cfs flow rate is not an MFL criterion.
The percent of flow approach is easier to understand where there is a surface water withdrawal.
A draft 2010 MFL rule for the system read in part (emphasis added):
"40D-8.041 Minimum Flows
(1) – (15) No change.
(16) Minimum Flows for the Chassahowitzka River System.
(b) Minimum Flow for the Chassahowitzka River System is 89% of the natural flow as measured at the United States Geological Survey (USGS) Gage Chassahowitzka River near Homosassa (Gage No. 02310650). The minimum flow at any point below this Gage is based on the previous day's natural flow at that point minus 11 percent."
If this rule were applied to a surface water withdrawal over the 2010 and 2011 flows that you evaluated, the results would appear as below. Each day is multiplied by 89% to determine how much flow must remain. The 63 cfs is not identified in the proposed 2010 rule and, is not a recommended MFL, nor does it figure into the application of the MFL rule.

GRAPH GAP

In light of your comments and in rereading the Executive Summary of the November 2010 draft report on proposed MFL for the Chassahowitzka River system, I do agree that the meaning of the word "baseline" should be improved and clarified. I will endeavor to do so in final report.
Some discussion about the origin and application of the 63 cfs in evaluating the Chassahowitzka MFL is warranted.

This value represents the median of daily flows from 1/1/1967 through 11/29/2007. Development of this data set is documented in Chapter 10.1 of the November draft report. The data set reflects measured and estimated flows slightly

downstream of the Main spring at the present location of the USGS gage 02310650. These flows do not include contributions from Crab Creek and other sources further downstream.

By definition, half of the daily values are greater than the median value and half are less than
the median. In this case, the record exhibits a statistically significant declining trend that is described in section 2.4 of the November draft report, so it should come as no surprise that the
majority of the flow values below the median have occurred in the more recent years. The median flow is simply the “middle point” of a collection of flows, and was simply chosen to represent typical flows in the Chassahowitzka.
It should be noted that ,provided the flow used in the MFL evaluation is within the range of observed flows, linear responses to flow are unaffected by the initial choice of flow as shown in
the following illustration of hypothetical response. In the case of the proposed Chassahowitzka
MFL, the following metrics exhibited linear response to flow or salinity and thus are independent
of the initial flow value chosen for evaluation:
UNQUOTE

This response was to an e-mail I sent indicating 46% of the days in the last two year flows into the Chassahowitzka were below the minimum flows set in the draft report. A similar e-mail sent a couple of days earlier indicated on 84% of the days in the last two years flows into the Homosassa were below the minimum flows set in the corresponding draft report.

It is worrying to contemplate the agenda are these ideas to confuse us by;

- semantics eg *(From above) If this rule were applied to a surface water withdrawal over the 2010 and 2011 flows that you*

evaluated, the results would appear as below...Chass is a spring fed river, or

- legal jargon about amending a legal definitions by rule changes.

Is it to just keep on pumping the aquifer?

The hypothetical fish reduction graph, if you read the attachment, is…….

Some serious common sense questions need to be answered. What is the minimum flow and what criteria say it has been reached; day, week, month? What are the recovery plans for these rivers (Chassahowitzka and SE Fork of Homosassa are on the Impaired Waters list by Department of Environmental Protection)?

Martyn
I guess this will upset a lot of people, but this needs nipping in the bud. I trust there will be a rethink of this matter and a fast correction made. I could have posted this on the working group web site but how many would have read it.

From: Doug.Leeper@swfwmd.state.fl.us
Date: Fri, 13 Jan 2012 15:55:10 -0500
Subject: Update - Chassahowitzka and Homosassa Minimum Flows

Greetings:

I'm writing to provide an update on the status of minimum flows development for the Chassahowitzka and Homosassa River systems by the Southwest Florida Water Management District. The District would like to make it as convenient as possible for the stakeholders to review final reports and attend the Governing Board meeting where the information will be presented. To provide staff the necessary time to consider public concerns, complete revisions, and provide stakeholders an opportunity to review the revised reports, District staff will not be presenting the proposed minimum flows rule amendments to the District Governing Board until April.

The revised reports are expected to be ready for public review by the end of February. District staff expects to have the final reports ready for the rule amendments presentation, which is planned for April 24, 2012 at the Governing Board meeting at the District's headquarters in Brooksville.

Please feel free to contact me directly if you have any questions concerning the updated schedule for development of minimum flows for the Chassahowitzka and Homosassa River systems, or other water management issues.

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

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From:	Ron Basso
To:	Alan Martyn Johnson; Doug Leeper
Cc:	Ron Miller; Al Grubman; Brad Rimbey; Norman Hopkins; Paul Williams; Claire E. Muirhead; Brent Whitley
Subject:	RE: Homosassa MFL"s
Date:	Monday, January 23, 2012 4:04:01 PM
Attachments:	WUPS_2011_12.xlsx

Mr. Johnson:

In an earlier email you inquired as to the number of water use permits that were issued in the six-county region of the northern district over the last year (Jan 1, 2011 to Jan 1, 2012).

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

I have compiled a list in the attached excel file similar to the well construction information sent to you earlier. In total, there were 29 water use permits (WUPs) issued in the six-county region of the northern district (includes Hernando, Citrus, Lake, Levy, Marion, and Sumter counties). Nine of the 29 WUPs were new and were issued for a total average daily permitted quantity of nearly 2.4 mgd. Six of the nine new WUPs are in Marion County, two in Sumter County, and one in Hernando County. These 9 new permitted withdrawals represent less than 2 percent of existing groundwater use in the 6-county region of the our District. There were no new WUPs issued in Citrus County over the last year. The other 20 WUPs were renewals of existing permits. Total average daily permitted withdrawals are 42 mgd for all 20 WUP renewals. None of the WUP applications over the last year were denied.

If you have any questions or need further clarification, please contact me.

Ron Basso, P.G.
Senior Professional Geologist
Hydrologic Evaluation Section
Southwest Florida Water Management District
ph 1-800-423-1476 (in state)
ph 352-796-7211, ext. 4291 (outside state)
FAX 352-797-5799

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Friday, January 20, 2012 8:06 AM
To: Ron Basso; Doug Leeper
Cc: Ron Miller; Al Grubman; Brad Rimbey; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley; Paul Williams; Claire E. Muirhead
Subject: RE: Homosassa MFL's

Ron,
Thanks for taking the time to collect this information.
Do I assume correctly;

-Monitor wells are for use by USGS/SWFWMD to monitor the aquifer and have no withdrawals
-Plugged is a well that was drilled but the water quantity or quality did not meet expectations to install a pump and were thus plugged/sealed
-What falls in the other category...no need to list all just one or two examples if you have them handy as they do not fall into the 715.

The 9 large wells (over 100,000 gpd as I understand) do they have to specify the 'intended' gpd? In other words if they plan on drawing 200,000 gpd is that stated in the request....I guess the answer is yes if it is regulated. If you have the gpd for these wells please share if not no problem.

I notice that Citrus, Hernando and Marion each have a total of 300 permits issued; is there some sort of maximum permits per year per county or is this simply coincident?

Thanks again for the time taken to answer the questions.

Martyn

From: Ron.Basso@swfwmd.state.fl.us
To: martynellijay@hotmail.com; Doug.Leeper@swfwmd.state.fl.us
CC: rmille76@tampabay.rr.com; grubman1@gmail.com; brimbey3@tampabay.rr.com; norman@amyhrf.org; jdweaver@usgs.gov; rrodrigu@usgs.gov; kjgrims@usgs.gov; Paul.Williams@swfwmd.state.fl.us; Claire.Muirhead@swfwmd.state.fl.us
Date: Wed, 18 Jan 2012 11:34:04 -0500
Subject: RE: Homosassa MFL's

Mr. Johnson:

I've completed your request regarding the number of well construction permits issued in the six-county region of our Northern District over the last year (January 1, 2011 to January 1, 2012). I have attached the information in an excel file for your review. We are still researching the number of water use permits (new, modifications, or renewals) issued over the last year in the same region.

The well construction permit data indicates that there were 715 small diameter wells (less than 6 inches diameter) completed over the six-county region during the last year. These include wells installed for domestic self-supply, household irrigation wells, and livestock watering wells. As I mentioned in my earlier email, these wells do not meet our water use permit threshold and are exempt from those permitting requirements. A driller only needs to obtain a well construction permit to install these wells. We do not regulate them. However, their use is quite small. If we assume a use of 500 gallons per day (gpd) per well, the total water use for all 715 wells is only 357,500 gpd. This amounts to less than one-half of one percent of all groundwater withdrawn in the six-county region.

Only 9 larger diameter wells (6 inches well diameter or greater) were installed in the six-county region over the last year. These wells are part of a water use permit and they're use is regulated by the District. If you have any questions, please do not hesitate to contact me.

Ron Basso, P.G.
Senior Professional Geologist
Hydrologic Evaluation Section
Southwest Florida Water Management District
ph 1-800-423-1476 (in state)
ph 352-796-7211, ext. 4291 (outside state)
FAX 352-797-5799

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Tuesday, January 03, 2012 1:00 PM
To: Doug Leeper
Cc: Ron Miller; Al Grubman; Brad Rimbey; Ron Basso; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject: Homosassa MFL's

Doug,
It has been some 15 months since you started a process seeking public input regarding the MFL's for the Homosassa River. In a series of public meetings and forming a working group you have heard from members of the public and various stakeholder representatives. In the meetings Chassahowitzka, Crystal River and the Homosassa were involved. The question now is how will all this be incorporated in what is presented to the SWFWMD Board regarding the Chassahowitzka and Homosassa Rivers. I have heard comments about some of the older flow data being incorporated in the report, but it will not influence the data used in the 'all controlling' Northern District Model. I have heard that all the e-mails letters and presentations will be in 'appendices', but I doubt the Board will read these. So what will be presented?

Will a revised draft report or final report be published prior to presentation to the Board?
Will public input regarding major increase in barnacle growth as evidence of harm be included?
Will some preliminary analysis of acoustic doppler flow data SE Fork be included?
Will the USGS review of flow measurements/methodology in the Homosassa be mentioned?

In the Executive Summary page 20 of the July 12, 2010 Peer-Review Draft the wording includes:

Estimated combined discharge past United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River has averaged 152 cubic feet per second (cfs) for the period from 1995 through 2009
……..
Declines in flow to the system associated with groundwater withdrawals were estimated to be approximately 2.3 cfs, including a 1 cfs decline in the springs contributing to flow past the USGS gages in the Homosassa Main Springs run and Southeast Fork. This 1 cfs change in flow was considered insignificant as compared to the estimated average flow of 152 cfs for the two sites, so available flow records for the sites were considered representative of baseline conditions for evaluation of minimum flow criteria. Because break-points in ecological responses were not observed, a fifteen percent loss of resource or habitat was adopted as representative of significant harm.
The most sensitive resource responses to modeled flow reductions were exhibited by fish and

invertebrate plankton and nekton, i.e., free-floating and actively swimming organisms. Flow reductions of 2.7 percent or less from median baseline conditions were associated with fifteen percent reductions in predicted abundances of individual pseudo-species or taxa. Similar or increased sensitivity to flow reductions was predicted for many taxa across the range of baseline flows, in particular for baseline flows less than the median flows.

……

Modeled responses of a number of salinity-based habitats in the Homosassa River main channel were also relatively sensitive to flow reductions. Flow reductions of less than five percent were associated with more than fifteen percent reductions in selected salinity-based habitats determined from isohalines with salinities of 2, 3, 5 and 12.

……

Based on review of resource and habitat-based criteria, the recommended minimum flows for the Homosassa River system are defined as a five percent reduction from baseline flows. Given the minimal existing withdrawal impacts on flow, the recommended minimum flows are a five percent reduction from combined flows measured on a daily basis at the USGS gauge sites in the Homosassa Springs run and Southeast Fork of the Homosassa River.

Reminder: Few believe the 2.3 cfs is an accurate reflection of groundwater withdrawal reduction.

I am hoping that a 'new' Executive Summary will rely less on estimates to develop a defined answer.
Hopefully, through all the meetings/discussion we better recognize the legal requirement to set MFL's was a good concept when it was first enacted. To truly protect the future, minimum levels in the aquifer controlled by strict limits on groundwater withdrawals may be much more effective as a proactive approach for protecting Outstanding Florida Waters along the Spring Coast and all the economic activities which rely on water as a resource.

DECEMBER 13 Memo
Thanks to all who put the efforts into documenting and responding to the October workshop. I have read the December 13 memo posted on the web site. I have a number of comments and questions. For ease of reference I have numbered them.

1. **Semantics over shadow the real issues and cloud the facts.**

December 13 Memo page 4

Staff also notes that a strict definition of "mining groundwater" is where groundwater withdrawals exceed annual recharge to the aquifer, and based on this definition, there is no "mining" of groundwater in the Northern District. In the spring's coast groundwater basin, average recharge to the Upper Floridan aquifer is about 14 inches per year, while current groundwater withdrawals are approximately one inch per year.

Where does this strict definition come from? From my search it does not appear to have made it to the web yet. Sucking water out of the aquifer using power pumps sure sounds like a form of mining which is; *removing minerals* (resources) *from the ground, the process or business of removing minerals* (resources) *from the ground*. Semantics water is not a mineral, but it certainly is a valuable resource for which the equilibrium is moving in the wrong direction.

The facts in the statement. Over 7% of the water making it into the aquifer is being pumped out. This is 7% that does not provide the driving force to push water through the ground to the springs.

No pumping is equilibrium.
Looking at the often quoted Weeki Wachee Well it is clear that the water table has been declining. Similar is true for the Lecanto well mentioned in the July 2010 report.

Graph of DAILY Elevation above NGVD 1929, feet, ,Tampa DCP data

NOTE: IF THE USGS GRAPH DOES NOT COPY INTO THE E-MAIL; it is the presentation quality graph of daily data on the USGS web site for Weeki Wachee Well 1970-present..

Can the decline in well level all be attributed to rainfall? Take 2003 and 2004, both years saw high rainfall due to hurricanes and the water table increased to over 23 feet both years, but look how quickly the levels dropped to just over 16 feet. Compare that drop to what happened in the early 80's. Was spring flow lower in the 80's so the water table dropped more slowly? Or, could increased groundwater withdrawals be the difference?

It is always so easy to get apples and oranges mixed, but where do the 14 and 1 inch come from. Specifically in the quote from page 4, the origin of the *average* 14 inches recharge is not referenced and similarly for the *current* one inch associated with withdrawals.
Appreciated this data may be combined from a number reports.

Looking in the Homosassa reviews, recharge is not mentioned in the July 12, 2010 Draft Review.
In the Appendices to the Review it is stated (page 338 of the pdf file under 2.0 Hydrogeologic Conditions):
The highest recharge rates to the UFA occur in west-central Hernando and Citrus Counties with values ranging between 10 and 25 inches per year (Sepulveda, 2002).
And further (on page 340):
The United States Geological Survey (USGS) developed a water budget for the basin for calendar years 1997 and 1998 (Knochenmus and Yobbi, 2001). According to Knochenmus and Yobbi's calculations,

average annual values for the following water budget components were:
Rainfall = 52 inches (in)/yr,
Evapotranspiration = 32 in/yr,
Springflow = 12.5 in/yr,
Groundwater Withdrawals = 0.6 in/yr,
Groundwater Outflow = 6.7 in/yr and
Change in Storage = 0.2 in/yr
Based on the USGS water budget, net recharge to the UFA averaged 20 in/yr for the two-year period. As a percentage of recharge, groundwater withdrawals averaged about three percent of annual recharge.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

2. **Groundwater Withdrawals**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

Something does not seem to add up. Early 2011 the following was a response to a question about new wells:
"Review of the District's Well Construction Database indicates that 213 and 941 permits were issued for withdrawals in Citrus County during the past year and past three years, respectively."……."With regard to water-use permitting……. Fewer than ten of the hundreds of surface- and groundwater use permit requests received by the Brooksville Regulation Department during the past three years were not issued. Note that this department of the District handles water use permitting for withdrawals in the northern portion of the District, which includes Citrus County, Hernando County, Pasco County, Sumter County, and portions of Lake, Levy and Marion counties."

QUESTION A**: WITH ALL THESE NEW WELLS AND WATER USE PERMITS HOW CAN CONSUMPTION HAVE DECLINED/REMAINED FLAT?** Some data to support the statement would be useful.

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

3. **Rainfall; the giver or the excuse.**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

December 13 Memo page 20

Staff acknowledges Mr. Miller's comments and notes that minimum flows and levels do, in effect, serve to establish a limit or cap beyond which further water withdrawals would be significantly harmful to area water resources and ecology. Once incorporated into District rules, minimum flows and levels become one criterion used in the evaluation of requests for water use permits. Similarly, minimum flows and levels help identify withdrawal limits that are incorporated into water supply planning efforts.

December 13 Memo page 25

Staff acknowledges Mr. Johnson's comments but does not support a five-year moratorium on the issuance or renewal of water use permits for area groundwater withdrawals. Staff does support the careful evaluation of all future renewals or issuances of water use permits in the Springs Coast area and elsewhere in the District.

Actions Speak Louder Than Words.
Sooner or later it will be recognized water management must deal with the rainfall as it occurs. Rainfall is income, you have to deal with the income you have this year.

The growers who tonight (January 3, 2012) will spray tremendous quantities of water from the aquifer on their crops are drawing from limited resources. It appears later rather than sooner attention will be paid to limiting water withdrawals; but for right now water use permits are issued to anyone who submits the correct paperwork. Moreover, when the circumstances are 'such'(like tonight's freeze) the limits will be waived....this highly probable for MFL's also The information regarding well construction and water use permits requested earlier combined with declines at wells in the area over the next few days will help validate if actions speak louder than words.

4, Discharge Measurements

December 13 Memo page 24 and 25

Staff notes that Mr. Grimsley addressed Mr. Johnson's questions about the ongoing efforts related to measurement of discharge in the Southeast Fork of the Homosassa River during the October workshop.

Response: Mr. Kevin Grimsley, with the United States Geological Survey, noted that equipment used to measure water velocities was installed at the Southeast Fork gage site in September and that negative velocities were recorded at the site last week as a meteorological front passed through the area. Mr. Grimsley added that it would be approximately six months to one year before sufficient data have been obtained for development of a velocity index rating curve for the gage site.

The USGS real time data indicates data from the acoustic doppler flow measuring equipment was operational early September with data collected at 15 minutes past each hour, 24 readings each day. With over 2500 readings some preliminary indication of how this equipment correlates with the calculated discharge data must be possible. The equations for the calculated data were developed by regression analysis of far less data than 2500 measurements.
It is noteworthy that since installation of the acoustic doppler unit, calculated data at the 30 minutes

past the hour intervals is being calculated using a dS/dt(change in stage height) component in the formula for 30 minutes rather than for 15 minutes.
At 05:30 on October 19, 2011 the calculated figure was -0.27 cfs; this was calculated using a stage height change of 0.1 (2.67 to 2.77) multiplied by the equation constant of 418.14 or a contribution of -41.8 cfs the next two calculated reading were at 05:45 am of 20 cfs (stage change 2.77 to 2.82) and 06:00 am of 20 cfs (stage change 2.82 to 2.87) both these stage changes result in contribution of -20.91 cfs. Realizing this is more detail than most of you need lets just say this was/is not the only occurrence. Presumably this difference in calcultion will be addressed when the data approval process takes place.

Date/Time	Calculated Discharge	Stage Change
10/19 05:30	-0.27 cfs	0,1
10/27 02:30	-1.1 cfs	0,14
11/22 14:30	-3.0 cfs	0.14
11/27 03:30	-0.17cfs	0.13
11/28 03:30	-3.8 cfs	0.13

On October 19/20, 2011 USGS conducted Field Measurements Acoustic Doppler data collection was suspended from 08:30 until 15:30 allowing 15 minute dS/dt calculated component to be reported. Calculated versus field measurement discharge is shown in the following table.

Number	Date	Time	Stream flow (ft^3/s)	Calculated Flow Real Time Data (ft^3/s)	
180	2011-10-20	05:51	76.2	64	84%
179	2011-10-20	05:24	75.4	59	78%
178	2011-10-19	14:46:30	68.2	51	75%
177	2011-10-19	14:18:30	59.0	51	86%
176	2011-10-19	13:46	59.8	55	92%
175	2011-10-19	13:25	55.8	46	82%
174	2011-10-19	12:54:30	50.6	50	99%
173	2011-10-19	12:26:30	55.8	49	88%
172	2011-10-19	11:59	52.9	45	85%
171	2011-10-19	11:25:30	49.8	49	98%
170	2011-10-19	10:51	43.8	44	100%
169	2011-10-19	10:24	45.2	52	115%

SUMMARY/CONCLUSION

With over 15 months of review the difference between estimated data and a defined MFL should be better understood. Also, the methods by with measurement/monitor compliance will be handled should be more confidently understood and scientifically verifiable.

Protecting and managing a resource as valuable as water to the future economy of the Springs Coast and the ecology of Outstanding Florida Waters in the area is a responsibility that will be assessed in the future. May be if some of the long term residents are respected when they say harm is already evident in the Homosassa River (major increase in barnacle growth, reduced fish population and noticeable flow reductions) the task will be easier.

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From:	Doug Leeper
To:	"martynellijay@hotmail.com"
Cc:	Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Doug Leeper; Gary E. Williams; Jay Yingling; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject:	Additional Response to Jan 3, 2012 E-Mail
Date:	Monday, January 23, 2012 5:31:00 PM

Martyn:

With this e-mail, I'd like to address some questions and comments raised in the e-mail you sent to me on January 3, 2012, and which is reproduced at the bottom of this e-mail. In this attempt to address your concerns, I have reproduced text from your e-mail below in italics and blue font and followed the excerpts with responses. The responses included in this e-mail build upon the responses provided by Ron Basso in e-mails sent to you on January 3, 2012 and earlier today.

Excerpt: *"It has been some 15 months since you started a process seeking public input regarding the MFL's for the Homosassa River. In a series of public meetings and forming a working group you have heard from members of the public and various stakeholder representatives. In the meetings Chassahowitzka, Crystal River and the Homosassa were involved. The question now is how will all this be incorporated in what is presented to the SWFWMD Board regarding the Chassahowitzka and Homosassa Rivers. I have heard comments about some of the older flow data being incorporated in the report, but it will not influence the data used in the 'all controlling' Northern District Model. I have heard that all the e-mails letters and presentations will be in 'appendices', but I doubt the Board will read these. So what will be presented?"*

Response: As appropriate, input from interested stakeholders will be incorporated into summary information/analyses presented in revised reports on proposed minimum flows for the Chassahowitzka and Homosassa River systems. In addition, all public input/comment will be included in appendices to the revised reports. The revised reports and appendices will be provided to Governing Board members prior to their consideration of rule amendments concerning the proposed minimum flows. To assist Board members with their consideration of the substantial public input, staff expects to develop summary information on major stakeholder concerns.

Excerpt: *"Will a revised draft report or final report be published prior to presentation to the Board?"*

Response: Yes, current expectation is that a revised report will be completed and made available for stakeholder review sometime next month.

Excerpt: *"Will public input regarding major increase in barnacle growth as evidence of harm be included?"*

Response: Information on the District funded study of barnacle distribution in the Homosassa and other Springs Coast rivers is included on Page 108 of the July 12, 2012 draft report on proposed minimum flows for the Homosassa River system, and will be updated in the revised report. The revised report may be expected to include information addressing stakeholder input regarding barnacle distribution in the river.

Excerpt: *Will some preliminary analysis of acoustic doppler flow data SE Fork be included?*

Response: Staff does not currently anticipate including preliminary analysis of data collected using the recently installed equipment at the Southeast Fork gage site, but will likely note the changes made at the gage site and the expectation for future data availability.

Excerpt: *Will the USGS review of flow measurements/methodology in the Homosassa be mentioned?*

Response: I'm not quite sure what is meant by your question, although I note that information pertaining to the new streamflow measurement instrumentation in the Southeast Fork of the Homosassa River and in Halls River will be mentioned in the revised report.

Excerpt (highlighting not reproduced): *"In the Executive Summary page 20 of the July 12, 2010 Peer-Review Draft the wording includes:*

Estimated combined discharge past United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River has averaged 152 cubic feet per second (cfs) for the period from 1995 through 2009
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Declines in flow to the system associated with groundwater withdrawals were estimated to be approximately 2.3 cfs, including a 1 cfs decline in the springs contributing to flow past the USGS gages in the Homosassa Main Springs run and Southeast Fork. This 1 cfs change in flow was considered insignificant as compared to the estimated average flow of 152 cfs for the two sites, so available flow records for the sites were considered representative of baseline conditions for evaluation of minimum flow criteria. Because break-points in ecological responses were not observed, a fifteen percent loss of resource or habitat was adopted as representative of significant harm. The most sensitive resource responses to modeled flow reductions were exhibited by fish and invertebrate plankton and nekton, i.e., free-floating and actively swimming organisms. Flow reductions of 2.7 percent or less from median baseline conditions were associated with fifteen percent reductions in predicted abundances of individual pseudo-species or taxa. Similar or increased sensitivity to flow reductions was predicted for many taxa across the range of baseline flows, in particular for baseline flows less than the median flows.
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Modeled responses of a number of salinity-based habitats in the Homosassa River main channel were also relatively sensitive to flow reductions. Flow reductions of less than five percent were associated with more than fifteen percent reductions in selected salinity based habitats determined from isohalines with salinities of 2, 3, 5 and 12.
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Based on review of resource and habitat-based criteria, the recommended minimum flows for the Homosassa River system are defined as a five percent reduction from baseline flows. Given the minimal existing withdrawal impacts on flow, the recommended minimum flows are a five percent reduction from combined flows measured on a daily basis at the USGS gauge sites in the Homosassa Springs run and Southeast Fork of the Homosassa River.

Reminder: Few believe the 2.3 cfs is an accurate reflection of groundwater withdrawal reduction.

I am hoping that a 'new' Executive Summary will rely less on estimates to develop a defined answer."

Response: Staff notes that the existing report on proposed minimum flows for the Homosassa River system includes estimated values. These estimates are derived using measured data and several models, including regression models, the Northern District groundwater flow model, and a hydrodynamic model of the river system. These estimates will continue to be used along with measured information to develop minimum flow recommendations for the river system. Florida Statutes (Section 373.042(1)(b)) require that the District use *the best information available* and staff believes that we have complied with that requirement. Staff acknowledges that the state of knowledge about flows and the ecology of the area can be improved and is committed to reevaluating this system in the future.

Excerpt: *"Hopefully, through all the meetings/discussion we better recognize the legal requirement to set MFL's was a good concept when it was first enacted. To truly protect the future, minimum levels in the aquifer controlled by strict limits on groundwater withdrawals may be much more effective as a proactive approach for protecting Outstanding Florida Waters along the Spring Coast and all the economic activities which rely on water as a resource."*

Response: The District continues to support development of minimum flows for the Homosassa and other Springs Coast systems as a means to protect the water resources of the area.

Thanks again for your inquiries and comments regarding development of minimum flows for the Springs Coast.

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

<><><><><><><><><><><><><><><>
E-Mail from Martyn Johnson
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From: Alan Martyn Johnson
To: Doug Leeper
Cc: Ron Miller; Al Grubman; Brad Rimbey; Ron Basso; Marty Kelly; Norman Hopkins; J Weaver; R Rodriguez; Kevin J Grimsley
Subject: Homosassa MFL"s
Date: Tuesday, January 03, 2012 12:59:45 PM

Doug,
It has been some 15 months since you started a process seeking public input regarding the MFL's for the Homosassa River. In a series of public meetings and forming a working group you have heard from members of the public and various stakeholder representatives. In the meetings Chassahowitzka, Crystal River and the Homosassa were involved. The question now is how will all this be incorporated in what is presented to the SWFWMD Board regarding the Chassahowitzka and Homosassa Rivers. I have heard comments about some of the older flow data being incorporated in the report, but it will not influence the data used in the 'all controlling' Northern District Model. I have heard that all the e-mails letters and presentations will be in 'appendices', but I doubt the Board will read these. So what will be presented?

Will a revised draft report or final report be published prior to presentation to the Board?
Will public input regarding major increase in barnacle growth as evidence of harm be included?
Will some preliminary analysis of acoustic doppler flow data SE Fork be included?
Will the USGS review of flow measurements/methodology in the Homosassa be mentioned?

In the Executive Summary page 20 of the July 12, 2010 Peer-Review Draft the wording includes:

Estimated combined discharge past United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River has averaged 152 cubic feet per second (cfs) for the period from 1995 through 2009
…….
Declines in flow to the system associated with groundwater withdrawals were estimated to be approximately 2.3 cfs, including a 1 cfs decline in the springs contributing to flow past the USGS gages in the Homosassa Main Springs run and Southeast Fork. This 1 cfs change in flow was considered insignificant as compared to the estimated average flow of 152 cfs for the two sites, so available flow records for the sites were considered representative of baseline conditions for evaluation of minimum flow criteria. Because break-points in ecological responses were not observed, a fifteen percent loss of resource or habitat was adopted as representative of significant harm.
The most sensitive resource responses to modeled flow reductions were exhibited by fish and invertebrate plankton and nekton, i.e., free-floating and actively swimming organisms. Flow reductions of 2.7 percent or less from median baseline conditions were associated with fifteen percent reductions in predicted abundances of individual pseudo-species or taxa. Similar or increased sensitivity to flow reductions was predicted for many taxa across the range of baseline flows, in particular for baseline flows less than the median flows.
……
Modeled responses of a number of salinity-based habitats in the Homosassa River main channel were also relatively sensitive to flow reductions. Flow reductions of less than five percent were associated with more than fifteen percent reductions in selected salinity based habitats determined from isohalines with salinities of 2, 3, 5 and 12.
……
Based on review of resource and habitat-based criteria, the recommended minimum flows for the Homosassa River system are defined as a five percent reduction from baseline flows. Given the minimal existing withdrawal impacts on flow, the recommended minimum flows are a five percent reduction from combined flows measured on a daily basis at the USGS gauge sites in the Homosassa Springs run and Southeast Fork of the Homosassa River.

Reminder: Few believe the 2.3 cfs is an accurate reflection of groundwater withdrawal reduction. I am hoping that a 'new' Executive Summary will rely less on estimates to develop a defined answer.

Hopefully, through all the meetings/discussion we better recognize the legal requirement to set MFL's was a good concept when it was first enacted. To truly protect the future, minimum levels in the aquifer controlled by strict limits on groundwater withdrawals may be much more effective as a proactive approach for protecting Outstanding Florida Waters along the Spring Coast and all the economic activities which rely on water as a resource.

DECEMBER 13 Memo
Thanks to all who put the efforts into documenting and responding to the October workshop. I have read the December 13 memo posted on the web site. I have a number of comments and questions. For ease of reference I have numbered them.

1. **Semantics over shadow the real issues and cloud the facts.**

December 13 Memo page 4
Staff also notes that a strict definition of "mining groundwater" is where groundwater withdrawals exceed annual recharge to the aquifer, and based on this definition, there is no "mining" of groundwater in the Northern District. In the spring's coast groundwater basin, average recharge to the Upper Floridan aquifer is about 14 inches per year, While current groundwater withdrawals are approximately one inch per year.

Where does this strict definition come from? From my search it does not appear to have made it to the web yet. Sucking water out of the aquifer using power pumps sure sounds like a form of mining which is; *removing minerals* (resources) *from the ground, the process or business of removing minerals* (resources) *from the ground*. Semantics water is not a mineral, but it certainly is a valuable resource for which the equilibrium is moving in the wrong direction.

The facts in the statement. Over 7% of the water making it into the aquifer is being pumped out. This is 7% that does not provide the driving force to push water through the ground to the springs.
No pumping is equilibrium.
Looking at the often quoted Weeki Wachee Well it is clear that the water table has been declining. Similar is true for the Lecanto well mentioned in the July 2010 report. Graph of DAILY Elevation above NGVD 1929, feet, ,Tampa DCP data

NOTE: IF THE USGS GRAPH DOES NOT COPY INTO THE E-MAIL; it is the presentation quality graph of daily data on the USGS web site for Weeki Wachee Well 1970-present..

Can the decline in well level all be attributed to rainfall? Take 2003 and 2004, both years saw high rainfall due to hurricanes and the water table increased to over 23 feet both years, but look how quickly the levels dropped to just over 16 feet. Compare that drop to what happened in the early 80's. Was spring flow lower in the 80's so the water table dropped more slowly? Or, could increased groundwater withdrawals be the difference?

It is always so easy to get apples and oranges mixed, but where do the 14 and 1 inch come from.
Specifically in the quote from page 4, the origin of the *average* 14 inches recharge is not referenced and similarly for the *current* one inch associated with withdrawals.
Appreciated this data may be combined from a number reports.

Looking in the Homosassa reviews, recharge is not mentioned in the July 12, 2010 Draft Review.
In the Appendices to the Review it is stated (page 338 of the pdf file under 2.0 Hydrogeologic Conditions):
The highest recharge rates to the UFA occur in west-central Hernando and Citrus Counties with values ranging between 10 and 25 inches per year (Sepulveda, 2002).
And further (on page 340):
The United States Geological Survey (USGS) developed a water budget for the basin for calendar years 1997 and 1998 (Knochenmus and Yobbi, 2001). According to Knochenmus and Yobbi's calculations, average annual values for the following water budget components were:
Rainfall = 52 inches (in)/yr,
Evapotranspiration = 32 in/yr,
Springflow = 12.5 in/yr,
Groundwater Withdrawals = 0.6 in/yr,
Groundwater Outflow = 6.7 in/yr and
Change in Storage = 0.2 in/yr
Based on the USGS water budget, net recharge to the UFA averaged 20 in/yr for the two year period. As a percentage of recharge, groundwater withdrawals averaged about three percent of annual recharge.

QUESTION: **PLEASE EXPLAIN WHERE THE AVERAGE 14 INCHES RECHARGE AND CURRENT 1 INCH WITHDRAWAL FIGURES COME FROM.**

2. **Groundwater Withdrawals**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

Something does not seem to add up. Early 2011 the following was a response to a question about new wells:
"Review of the District's Well Construction Database indicates that 213 and 941 Permits were issued for withdrawals in Citrus County during the past year and past three years, respectively."……"With regard to water-use permitting……. Fewer than ten of the hundreds of surface- and groundwater use permit requests received by the Brooksville Regulation Department during the past three years were not issued. Note that this department of the District handles water use permitting for withdrawals in the northern portion of the District, which includes Citrus County, Hernando County,
Pasco County, Sumter County, and portions of Lake, Levy and Marion counties."

QUESTION A**: WITH ALL THESE NEW WELLS AND WATER USE PERMITS HOW CAN CONSUMPTION HAVE DECLINED/REMAINED FLAT?** Some data to support the statement would be useful.

QUESTION B: How many well construction permits and water use permits were issued during 2011 and how many were rejected. Same basis as pervious data would be helpful.

3. **Rainfall; the giver or the excuse.**

December 13 Memo page 6
In response to these assertions, staff notes that groundwater consumption in the Springs Coast area has actually declined slightly or remained flat since 2006. In the Northern Groundwater Basin, aquifer water levels and spring flows have declined largely due to low rainfall conditions occurring over the last 20 years.

December 13 Memo page 20

Staff acknowledges Mr. Miller's comments and notes that minimum flows and levels do, in effect, serve to establish a limit or cap beyond which further water withdrawals would be significantly harmful to area water resources and ecology. Once incorporated into District rules, minimum flows and levels become one criterion used in the evaluation of requests for water use permits. Similarly, minimum flows and levels help identify withdrawal limits that are incorporated into water supply planning efforts.

December 13 Memo page 25

Staff acknowledges Mr. Johnson's comments but does not support a five-year moratorium on the issuance or renewal of water use permits for area groundwater withdrawals. Staff does support the careful evaluation of all future renewals or issuances of water use permits in the Springs Coast area and elsewhere in the District.

Actions Speak Louder Than Words.
Sooner or later it will be recognized water management must deal with the rainfall as it occurs. Rainfall is income, you have to deal with the income you have this year.

The growers who tonight (January 3, 2012) will spray tremendous quantities of water from the aquifer on their crops are drawing from limited resources. It appears later rather than sooner attention will be paid to limiting water withdrawals; but for right now water use permits are issued to anyone who submits the correct paperwork. Moreover, when the circumstances are 'such'(like tonight's freeze) the limits will be waived….this highly probable for MFL's also The information regarding well construction and water use permits requested earlier combined with declines at wells in the area over the next few days will help validate if actions speak louder than words.

4, Discharge Measurements

December 13 Memo page 24 and 25

Staff notes that Mr. Grimsley addressed Mr. Johnson's questions about the ongoing efforts related to measurement of discharge in the Southeast Fork of the Homosassa River during the October workshop.

Response: Mr. Kevin Grimsley, with the United States Geological Survey, noted that equipment used to measure water velocities was installed at the Southeast Fork gage site in September and that negative velocities were recorded at the site last week as a meteorological front passed through the area. Mr. Grimsley added that it would be approximately six months to one year before sufficient data have been obtained for

development of a velocity index rating curve for the gage site.

The USGS real time data indicates data from the acoustic doppler flow measuring equipment was operational early September with data collected at 15 minutes past each hour, 24 readings each day. With over 2500 readings some preliminary indication of how this equipment correlates with the calculated discharge data must be possible. The equations for the calculated data were developed by regression analysis of far less data than 2500 measurements.
It is noteworthy that since installation of the acoustic doppler unit, calculated data at the 30 minutes past the hour intervals is being calculated using a dS/dt(change in stage height) component in the formula for 30 minutes rather than for 15 minutes.
At 05:30 on October 19, 2011 the calculated figure was -0.27 cfs; this was calculated using a stage height change of 0.1 (2.67 to 2.77) multiplied by the equation constant of 418.14 or a contribution of -41.8 cfs the next two calculated reading were at 05:45 am of 20 cfs (stage change 2.77 to 2.82) and 06:00 am of 20 cfs (stage change 2.82 to 2.87) both these stage changes result in contribution of -20.91 cfs. Realizing this is more detail than most of you need lets just say this was/is not the only occurrence. Presumably this difference in calcultion will be addressed when the data approval process takes place.

Date/Time Calculated Discharge Stage Change
10/19 05:30 -0.27 cfs 0,1
10/27 02:30 -1.1 cfs 0,14
11/22 14:30 -3.0 cfs 0.14
11/27 03:30 -0.17cfs 0.13
11/28 03:30 -3.8 cfs 0.13

On October 19/20, 2011 USGS conducted Field Measurements Acoustic Doppler data collection was suspended from 08:30 until 15:30 allowing 15 minute dS/dt calculated component to be reported. Calculated versus field measurement discharge is shown in the following table.

Number	Date Time	Stream Calculated Flow (ft^3/s)	flow Real Time Data (ft^3/s)	
180	2011-10-20 05:51	76.2	64	84%
179	2011-10-20 05:24	75.4	59	78%
178	2011-10-19 14:46:30	68.2	51	75%
177	2011-10-19 14:18:30	59.0	51	86%
176	2011-10-19 13:46	59.8	55	92%
175	2011-10-19 13:25	55.8	46	82%
174	2011-10-19 12:54:30	50.6	50	99%
173	2011-10-19 12:26:30	55.8	49	88%
172	2011-10-19 11:59	52.9	45	85%
171	2011-10-19 11:25:30	49.8	49	98%
170	2011-10-19 10:51	43.8	44	100%
169	2011-10-19 10:24	45.2	52	115%

SUMMARY/CONCLUSION

With over 15 months of review the difference between estimated data and a defined MFL should be better understood. Also, the methods by with measurement/monitor compliance will be handled should be more confidently understood and scientifically verifiable.

Protecting and managing a resource as valuable as water to the future economy of the Springs Coast and the ecology of Outstanding Florida Waters in the area is a responsibility that will be assessed in the future. May be if some of the long term residents are respected when they say harm is already evident in the Homosassa River (major increase in barnacle growth, reduced fish population and noticeable flow reductions) the task will be easier.
<><><><><><><><><><><>

From:	Alan Martyn Johnson
To:	R Rodriguez; J Weaver; Doug Leeper; Marty Kelly; Mark Hammond; Mike Heyl; Kevin J Grimsley; rkane
Cc:	Al Grubman; Ron Miller; Brad Rimley; Brent Whitley; Ron Basso; Dana Bryan
Subject:	Follow up to Jan 19 Chassahowitzka
Date:	Sunday, January 22, 2012 11:08:05 AM
Attachments:	Chass Question reverse flow.xls

I know some of you think I am crazy. But, the fact is I keep thinking and trying to understand what is happening in these Outstanding Florida Waters.
The more we understand these data the more we understand the springs.

January 19 I shared some discharge and specific conductance data for the Chassahowitzka that did not appear to make logical sense.

Well I have been looking further for an explanation.

In the attached spreadsheet the difference in stream level at the Chassahowitzka Main Spring 02310650 and the Chassahowitzka River 02310663 are compared. Chass Main is considerably higher most of the time. There are occasions when the Specific Conductivity readings are high when no reverse flow due to the stream levels appears possible; Jan 13,14 and 15.

A thought that crossed my mind is the higher Specific Conductance Water could be discharging from one or some of the springs and is not due to reverse flow but from seawater ingress into the aquifer. The times when the higher specific conductance is seen coincides with high water times at the Chass River Station. The higher the water level the longer the higher specific conductance is detected.

I have highlighted high water levels in turquoise, specific conductance over 3000 in yellow and the time Chass Main is higher stream level in green for ease of reference.

Kevin and Richard will recall the changes in the specific conductance seen in the data for the Homosassa Main Spring for which I suggested monitoring Specific Conductance at the spring (as opposed to the gage station…even volunteered my time to help) we still have not improved our understanding of that situation months later.

Next time I am in Homosassa I will find a nice day when the tides are right to take my kayak to the Chass and monitor specific conductance over an extended period.
For Homosassa Springs 'they' do not let me kayak in the Homosassa Park, but my offer of time to help with that investigation stands.

In the meantime, any thoughts about this possible explanation for the Chass data is welcome.

Martyn

From: Alan Martyn Johnson
To: R Rodriguez
Cc: rkane; Kevin J Grimsley; Doug Leeper
Subject: RE: Discharge Chassahowitzka
Date: Friday, January 20, 2012 8:17:58 AM

Thanks appreciated.

Martyn

To: martynellijay@hotmail.com
CC: rkane@usgs.gov; kjgrims@usgs.gov
Subject: Re: Discharge Chassahowitzka
From: rrodrigu@usgs.gov
Date: Fri, 20 Jan 2012 07:48:55 -0500

Mr. Johnson,
We are checking with our headquarters regarding your request to release the regression equations used to calculate discharge at the subject site. They will get back to me next week and I will forward that information to you.
Thank you,
****
Rafael W. Rodriguez
Director
USGS Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
Phone: (813) 498-5024
Cell: (813) 463-3660
Fax: (813) 498-5003
rrodrigu@usgs.gov
http://fl.water.usgs.gov
****

From: Alan Martyn Johnson <martynellijay@hotmail.com>
To: R Rodriguez <rrodrigu@usgs.gov>, J Weaver <jdweaver@usgs.gov>
Cc: Doug Leeper <doug.leeper@swfwmd.state.fl.us>, Ron Basso <ron.basso@swfwmd.state.fl.us>, Marty Kelly <marty.kelly@swfwmd.state.fl.us>, <mark.hammond@swfwmd.state.fl.us>, <mike.heyl@swfwmd.state.fl.us>, Kevin J Grimsley <kjgrims@usgs.gov>, Brad Rimley <bwr.crrc@tampabay.rr.com>, Al Grubman <grubman1@gmail.com>, Ron Miller <rmille76@tampabay.rr.com>, Norman Hopkins <norman@amyhrf.org>, Brent Whitley <brentwhitley@sierra-properties.com>
Date: 01/19/2012 09:50 AM
Subject: Discharge Chassahowitzka

Mr. Rodriguez,
Please share the policy document which precludes USGS sharing the equation used to calculate Discharge at Chassahowitzka Station 02310650, as requested in an earlier e-mail from myself and from Brad Rimley as a member of the working group.

The ecological future of the Homosassa River, Crystal River and Chassahowitzka River depend heavily on data from USGS/SWFWMD gage sites and on open and honest dialogue about the accuracy of the generated data. To that end I would like to draw your attention to some Chassahowitzka data that appears to fall short of logical explanation.

The data is from USGS web site for the Chassahowitzka Gage Site 02310650.
As you will see in the attached spreadsheet I have highlighted the apparent disconnect between the calculated discharge measurements and the specific conductance measurement.

A section of the spreadsheet covering Jan 5/6 is show below and I will walk you thru my interpretation.

21:45 negative flow is calculated, water that past the gages earlier may be returning at the same temperature and specific conductance.
22:30 the water passing the gages is clearly mixed with water of higher temperature and higher specific conductance.
23:45 positive flow is calculated. I have added cumulative volume past the gage site (it is shown as cfs for ease of understanding but could be multiplied by time to represent volume).
23:45 thru 01:45 Specific conductance continues to increase, note the temperature remains at 22.3/22.4.
01:00/01:15 high stage is reached and calculated flow has increased to 36 and 54 cfs. Positive flows calculated for hour and half while stage continues to increase.
01:30 thru 02:45 temperature an specific conductance indicate this is water which passed the gages under negative flow conditions yet the cumulative positive flow has been more than five times the highest cumulative negative flow.
03:45 temperature and specific conductance are back close to representative of spring water. Going to the spreadsheet this is fully achieved about an hour later.

Time	Stage Ht	Discharge	Temp	SpecCond		
01/05/2012 21:00 EST	0.70P	33P	21.2P	1,990P	15 min	Cumulative
01/05/2012 21:15 EST	0.75P	15P	21.1P	1,980P	Discharge	Discharge
01/05/2012 21:30 EST	0.81P	5.2P	21.1P	1,980P	5.2	5.2
01/05/2012 21:45 EST	0.88P	-4.3P	21.2P	1,970P	-4.3	0.9
01/05/2012 22:00 EST	0.96P	-14P	21.2P	1,970P	-14	-13.1
01/05/2012 22:15 EST	1.04P	-14P	21.2P	1,970P	-14	-27.1
01/05/2012 22:30 EST	1.12P	-15P	21.8P	3,770P	-15	-42.1
01/05/2012 22:45 EST	1.20P	-15P	22.0P	4,970P	-15	-57.1
01/05/2012 23:00 EST	1.28P	-16P	22.0P	5,270P	-16	-73.1
01/05/2012 23:15 EST	1.35P	-7.2P	22.2P	5,560P	-7.2	-80.3
01/05/2012 23:30 EST	1.42P	-7.6P	22.3P	5,800P	-7.6	-87.9
01/05/2012 23:45 EST	1.48P	1.1P	22.3P	5,950P	1.1	-86.8
01/06/2012 00:00 EST	1.54P	0.72P	22.3P	6,040P	0.72	-86.08
01/06/2012 00:15 EST	1.59P	9.5P	22.3P	6,120P	9.5	-76.58

01/06/2012 00:30 EST	1.64[P]	9.2[P]	22.3[P]	6,160[P]	9.2	-67.38
01/06/2012 00:45 EST	1.68[P]	18[P]	22.3[P]	6,230[P]	18	-49.38
01/06/2012 01:00 EST	1.70[P]	36[P]	22.4[P]	6,300[P]	36	-13.38
01/06/2012 01:15 EST	1.70[P]	54[P]	22.4[P]	6,420[P]	54	40.62
01/06/2012 01:30 EST	1.68[P]	72[P]	22.4[P]	6,580[P]	72	112.62
01/06/2012 01:45 EST	1.65[P]	82[P]	22.4[P]	6,620[P]	82	194.62
01/06/2012 02:00 EST	1.62[P]	82[P]	22.3[P]	6,570[P]	82	276.62
01/06/2012 02:15 EST	1.58[P]	91[P]	22.3[P]	6,080[P]	91	367.62
01/06/2012 02:30 EST	1.54[P]	91[P]	22.2[P]	5,500[P]	91	458.62
01/06/2012 02:45 EST	1.50[P]	91[P]	22.0[P]	4,760[P]	91	549.62
01/06/2012 03:00 EST	1.46[P]	92[P]	21.4[P]	3,740[P]	92	641.62
01/06/2012 03:15 EST	1.42[P]	92[P]	21.4[P]	3,120[P]		
01/06/2012 03:30 EST	1.37[P]	101[P]	21.5[P]	2,800[P]		
01/06/2012 03:45 EST	1.32[P]	102[P]	21.4[P]	2,550[P]		

How is it possible the specific conductance can continue to increase when the flow becomes positive?
Agreed water of high specific conductance that passes the gauge/sensor under negative flow must elute from the upstream areas before the spring water shows at the gauge/sensor. But, I have great difficulty understanding how specific conductance continues to increase after the discharge (calculated) becomes positive. As you can see in the spreadsheet this is not a one time occurrence it is the norm. The highlighted temperature records appear to correlate more with the specific conductance data than the calculated discharge data.

An explanation would be appreciated, preferably not a one liner. I am always willing to learn.

If this is in anyway unclear please do not hesitate to ask for a more thorough explanation of my concern.

Martyn[attachment "Chassahowitzka Discharge Question.xls" deleted by Rafael W Rodriguez/WRD/USGS/DOI]

From:	Alan Martyn Johnson
To:	R Rodriguez; Doug Leeper
Cc:	rkane; Kevin J Grimsley; Ron Miller; Al Grubman; Brad Rimley; Norman Hopkins; Brent Whitley
Subject:	Specific Conductance Homosassa Main Spring
Date:	Saturday, January 28, 2012 9:03:41 AM
Attachments:	Homosassa Springs Specific Conductance Graphs.doc Homosassa Stage-SpecificC 30 days Jan 25.xls

Earlier this week the Homosassa State Park offered to allow me access to the park to sample water at the main spring in order to pursue/confirm my hypothesis regarding variations in the specific conductivity with the stage height.

Next time I am in Homosassa, mid February, I will agree the dates and sampling location. Presently the sampling plan is to sample hourly during park opening hours for three days (Monday Wednesday Friday) at a location as close as possible to the main vent. This should provide sufficient data to confirm the variation in specific conductance is in water emanating from the spring.

USGS are welcome to participate, or may want to pursue other plans to follow up as indicated in an e-mail last year.

The proposed sampling should confirm if the readings are the result of "stratification"; something I doubt given the flow from the main spring and the additional flow from Alligator Spring downstream of the gage site.

Background
Last August I pointed out cycling in the Specific Conductance data from the Homosassa Springs 02310678, suggesting the cycling was generally inverse to stage, that is the lower specific conductance water was discharging at higher stage. My thought was that this resulted from a change in the ratio of water flow from the three vents which combine some 30+ feet down in the main spring vent. This added to and may help explain the increasing trend for higher salinity water I noted in earlier e-mails regarding deterioration of the Homosassa River.

The responses I received were;

"When I look at the data I would say that specific conductance lags the peak gage height but is not inverse of stage. I can't say for sure why the lag but I think it is due to the hydraulics of the system. When the tide comes in some water will go into storage and this could be the reason behind the lag. You probably want to look at the salinity changes when the tide is out and then note what kind of changes you see. I haven't really looked at this since it is outside the scope of our work orders."

"We're planning on performing a few cross-section conductance measurements to investigate this lag between the water level and conductance cycles. We'll see what those measurements reveal, but we do not believe it has anything to do with variations in flow rates between the vents. We believe this is caused by stratification of flow around the gage location."

The long term trend of increasing specific conductance was pointed out in a graph See Graph 1 in the attached word document. The graph is made difficult to read because of the high specific conductance readings associated with hurricanes. In Graph 2 I have removed the high readings that caused the scale in Graph 1 to be so large. This makes the trend easier to see.
Graph 3 in the word document shows the water levels at the Weeki Wachee Well for the years that specific conductance has been monitored at Homosassa Spring (started June 2004), when looking in more detail at the daily data it correlates with the peaks in minimum daily specific conductance occurring when the well level is lower.

Graph 4 shows the Weeki Wachee Well from 1966 when records started.

Water from the Homosassa main spring is deteriorating due to ingress of sea water most likely occurring because the hydraulic head form the aquifer is less; and so much so that this increased salinity alone may be creating conditions for the barnacle growth that local residents have seen in recent years.

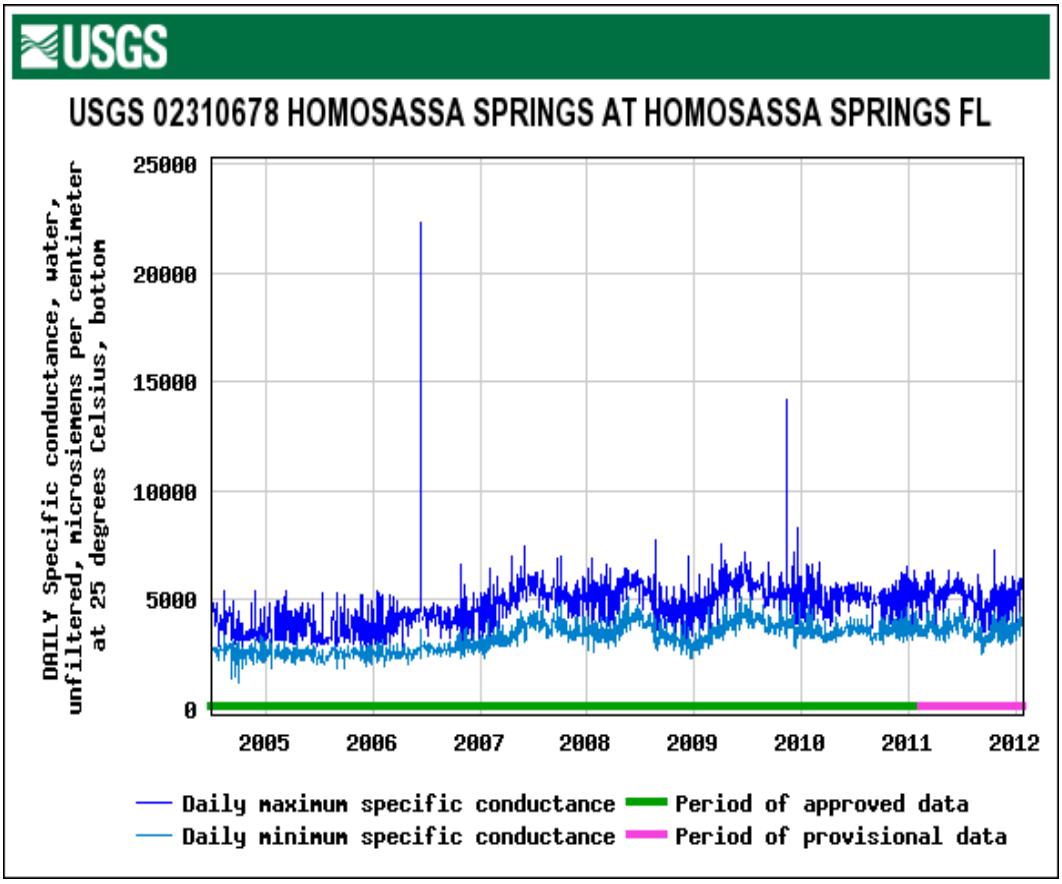
In the attached Excel spreadsheet the specific conductance and stage height for the last 30 days is shown highlighted as follows;
Yellow specific conductance greater than 5400
Blue, specific conductance less than 4000
Red, high stage
Green, low stage

Low specific conductance is associated with high stage, unless the stage height is very low and limited/no salt water intrusion is occurring (Jan 3-5). The yellow high specific conductance occurs after stage heights have exceeded 3.5 feet and maximums occur as the stage is dropping which is indicative that the highest salinity water takes time to elute from the system. Dec 27-28 the stage height was over 4 ft. and the higher level of sea water intrusion (Spec Cond over 5000) can be seen to continue for over 12 hours. This demonstrates how sensitive the system has become.

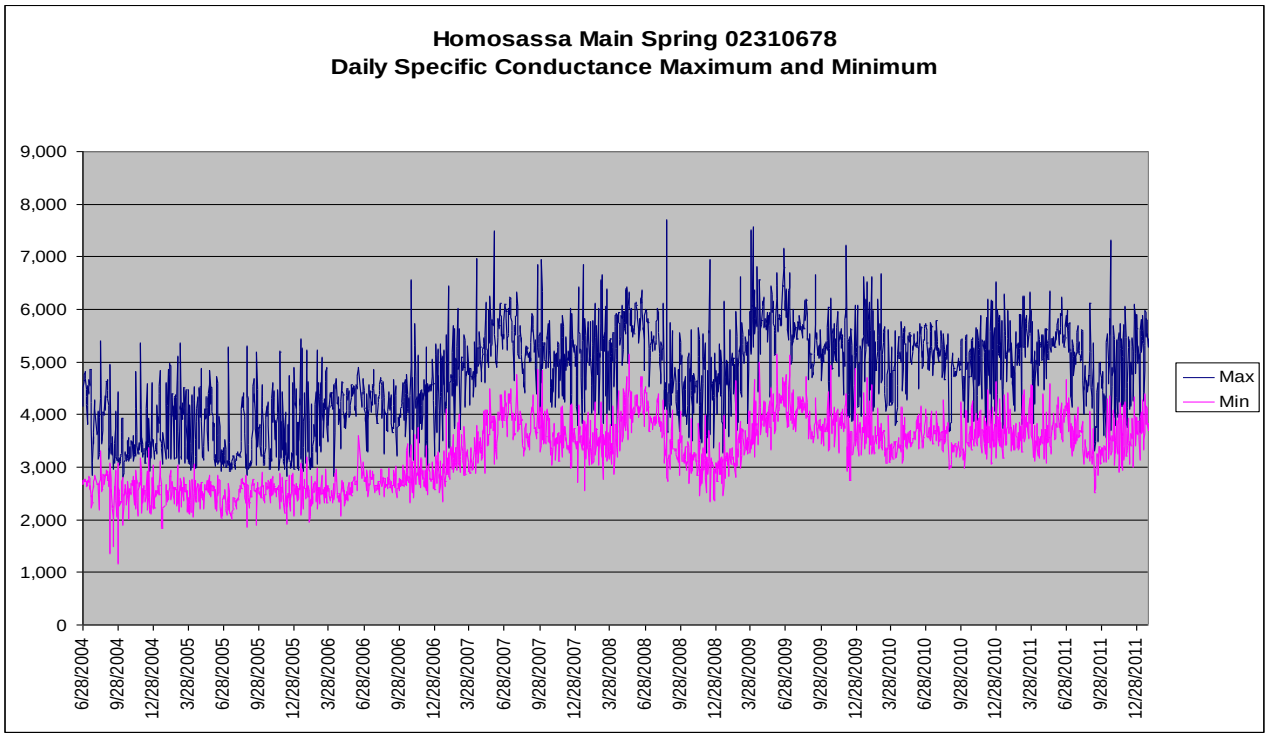
You are welcome to make your own interpretation.

Martyn

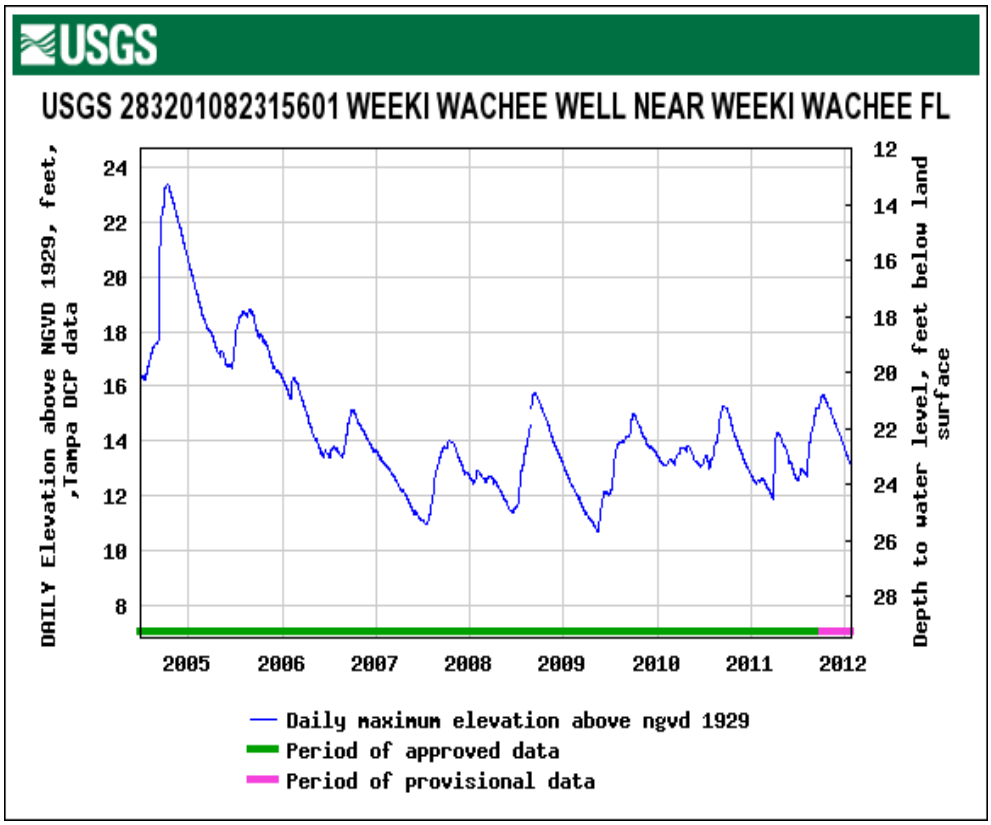
GRAPH 1



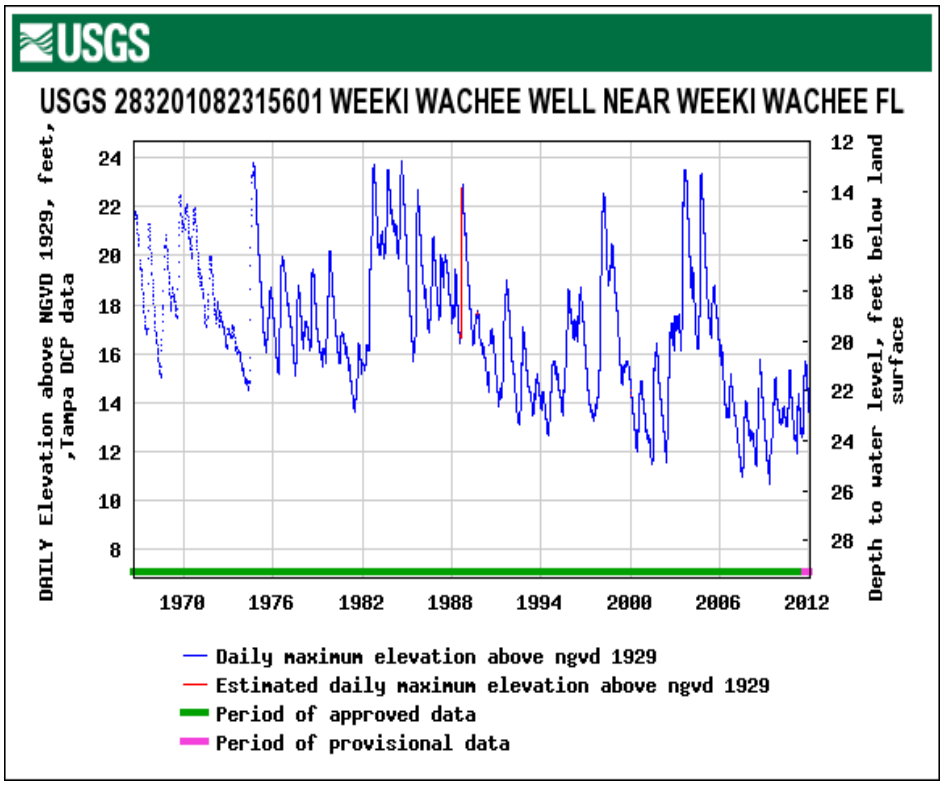
GRAPH 2



GRAPH 3



GRAPH 4



From:	Doug Leeper
To:	Martyn Johnson (martynellijay@hotmail.com)
Bcc:	Cara S. Martin; Chris Zajac; Christopher Pettit; Darcy A. Brune; Dave Dewitt; Doug Leeper; Gary E. Williams; Jay Yingling; Karen West; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Michael Molligan; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Tammy Hinkle; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject:	Response to Jan 6 E-mail to SWFWMD & Others
Date:	Tuesday, February 07, 2012 9:23:00 AM

Martyn:

With this e-mail, I'd like to address the questions included in the e-mail you sent to me and several others on January 6, 2012. In this attempt to address your concerns, I have reproduced text from your e-mail below in italics and blue font and followed the excerpts with responses. Note that your full, original e-mail is reproduced at the bottom of this e-mail.

You wrote: "1. Is baseline for establishing Minimum Flow for the Homosassa River 152 cubic feet per second combined flows from the USGS gage sites Homosassa Main Spring and SE Fork of Homosassa River (Executive Summary, Draft Peer Review July 2010).
YES
NO"

Response: No – As used for development of the proposed minimum flows, 'baseline' simply refers to a statistical metric (typically median) characterizing conditions associated with a specific period of flow (benchmark period). For the Homosassa system, two benchmark periods, calendar year 2007 and October 18, 1995 through May 13, 2009, were used to develop minimum flow recommendations. Combined flow records for the USGS Homosassa Main Spring and SE Fork Homosassa River for each benchmark period were used to characterize baseline conditions such as the volume of salinity-based habitat associated where salinities were less than or equal to 5. The baseline conditions evaluated for each benchmark period were associated with the respective median flows, *i.e.*, 130 cfs for the 2007 benchmark period and 150 cfs for the 1995-2009 benchmark period. Because median benchmark flows were used for the analyses, it may be expected that one-half of the flow values during each benchmark period were lower than the median values. Finally, it should be noted that the 152 cfs average flow value included in the Executive Summary of the draft minimum flows report represents the average or mean combined flow for the longer benchmark period, rather than a median value.

You wrote: "2. Is it correct the position taken by SWFWMD is "available data are sufficient for establishing scientifically defensible minimum flows for the…….. Homosassa River…."
Available data being from United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River (December 13, 2011 Memo and Peer Review October 2010).
YES
NO"

Response: Yes

You wrote: "3. Is the recommended minimum flows for the Homosassa River system defined as a five percent reduction from baseline flows of 152 cfs which is minimum flow 144 cfs.

YES
NO”

Response: No -- The recommended minimum flows for the Homosassa River system are an allowable percentage of flow reduction from the natural flow condition, which is defined as the flows that would exist in the absence of water withdrawals.

You wrote: “4. Are criteria set to define when the minimum flow has been reached e.g one day below, one week below, one month below (Peer Review Oct 2010 noted agreement ‘minimum flow do not need to be evaluated seasonally’).
YES
NO”

Response: Yes -- Compliance with minimum flows that are established for the Homosassa River system will be evaluated at a minimum on an annual basis through use of the Northern District Groundwater flow model and evaluation of rainfall-flow relationships. Compliance with the minimum flows may be evaluated more frequently, based on requests for issuance of a water use permit or permits that may be expected to influence flows in the system

You wrote: “5. If the USGS daily data for combined flows Homosassa Main Spring run and the Southeast Fork of the Homosassa River for the period January 2010 thru December 2011 shows FLOW IS BELOW THE MINIMUM 144 cfs on 84% of the days for
which data is available (daily data available 697 days), would you be surprised.
YES
NO”

Response: No

Thanks again for your inquiries and comments regarding development of minimum flows for the Springs Coast.

Douglas A. Leeper
Chief Environmental Scientist
Resource Projects Department
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604-6899
1-800-423-1476, ext. 4272 (FL only)
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From: Alan Martyn Johnson
To: Doug Leeper; Marty Kelly; Ron Basso; Ron Miller; Al Grubman; Brad Rimbey; Norman Hopkins; Brent Whitley; Dana Bryan; Kevin J Grimsley; rkane; R Rodriguez; J Weaver; robert.knight@bocc.citrus.fl.us; rebecca.bays@bocc.citrus.fl.us
Date: Friday, January 06, 2012 12:55:29 PM
Attachments: Combined Discharge H Springs and SEF Jan2010-Dec2011.xlsx

Further to my comments about a five year moratorium on new groundwater withdrawals made at the Working Group meetings; there was a basis for my comment.

It is often difficult to clearly understand the bottom line. So let me try to put this simply to get Yes or No responses.

1. Is baseline for establishing Minimum Flow for the Homosassa River 152 cubic feet per second combined flows from the USGS gage sites Homosassa Main Spring and SE Fork of Homosassa River (Executive Summary, Draft Peer Review July 2010).
YES
NO

2. Is it correct the position taken by SWFWMD is "available data are sufficient for establishing scientifically defensible minimum flows for the…….. Homosassa River…." Available data being from United States Geological Survey (USGS) gages in the Homosassa Main Spring run and the Southeast Fork of the Homosassa River (December 13, 2011 Memo and Peer Review October 2010).
YES
NO

3. Is the recommended minimum flows for the Homosassa River system defined as a five percent reduction from baseline flows of 152 cfs which is minimum flow 144 cfs.
YES
NO

4. Are criteria set to define when the minimum flow has been reached e.g one day below, one week below, one month below (Peer Review Oct 2010 noted agreement 'minimum flow do not need to be evaluated seasonally').
YES
NO

5. If the USGS daily data for combined flows Homosassa Main Spring run and the Southeast Fork of the Homosassa River for the period January 2010 thru December 2011 shows FLOW IS BELOW THE MINIMUM 144 cfs on 84% of the days for which data is available (daily data available 697 days), would you be surprised.
YES
NO

Just may be you should take a look at the data in the attached spreadsheet.

As always commentary and corrections welcome.
Martyn

Notes:
· Point 5. Additionally, for 25% of the days flow was below 20% reduction from the baseline. Less than 10% of days was discharge above the baseline of 152 cfs.
· Point 2 above, although SWFWMD may consider the calculated discharge data from the gage sites 'scientifically defensible' please note;
- USGS in Atlanta have agreed tois conduct a top level review of this data
- feedback from acoustic doppler unit installed SE Fork September still awaited

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From: Mike Heyl

To: Alan Martyn Johnson; Doug Leeper; Al Grubman (grubman1@gmail.com); Bill Geiger (bgeiger@cityofbrooksville.us); Bill Pouder (bill.pouder@myfwc.com); Boyd Blihovde (Boyd_Blihovde@fws.gov); Brad Rimbey (BWR.CRRC@tampabay.rr.com); Brent Whitley (brentwhitley@sierra-properties.com); Brockway, Alys (abrockway@co.hernando.fl.us); Dennis D. Dutcher (Dennis3ds@aol.com); Frank DiGiovanni (administration@inverness-fl.gov); Greenwood, Kathleen (Kathleen.Greenwood@dep.state.fl.us); Helen Spive; Hilliard, Dan (2buntings@comcast.net); Hoehn, Ted; Hope Corona (hopecorona@tampabay.rr.com); Jim Farley (jfarley682@aol.com); Katie Tripp (ktripp@savethemanatee.org); Norman Hopkins (norman@amyhrf.org); Rebecca Bays (rebecca.bays@bocc.citrus.fl.us); Richard Kane (rkane@usgs.gov); Richard Radacky (rradacky@cityofbrooksville.us); Ron Miller (rmille76@tampabay.rr.com); Sarah Tenison (cityofweekiwachee@yahoo.com); Sulllivan, Jack (jsullivan@carltonfields.com); Voyles, Carolyn (Carolyn.Voyles@dep.state.fl.us); Whitey Markle (whmarkle@gmail.com); (janicehowie@aol.com); Abdon Sidibie (asidibie@chronicle.online.com); Alex McPherson (aamcpherson@msn.com); Ann - 2 Hodgson (ahodgson@gmail.com); Ann Hodgson (ahodgson@audubon.org); Bernard Berauer (bfberauer@aol.com); Beverly Overa (boverly@tampabay.rr.com); Bill Garvin (wgarvin@tampabay.rr.com); Bob Caldwell (Bobcaldwell51@yahoo.com); Brack Barker (brack154@msn.com); Carl Mattthai (thebabesmimi@gmail.com); Casey, Emily (fcnwr@atlantic.net); Charles Dean (dean.charles.web@flsenate.gov); Charles Stonerock (katcha.stonerock3@gmail.com); Chris Safos (chrissafos@embarqmail.com); Czerwinski, Mike (mczerwin@tampabay.rr.com); Darlene Herth (2cetechnology21@gmail.com); Darrell Snedecor (president@citruscountyaudubon.com); Don Hiers (dhiers3@gmail.com); Douglas Dame (doug_dame@yahoo.com); Elaine Luther (barneyandcap@hotmail.com); Emily Casey (ecasey21@hotmail.com); Emma Knight (eknight@wetlandsolutionsinc.com); George Harbin (gharbin@tampabay.rr.com); George McClog (classof47@gmail.com); Gorgon O"Connor (gorgon_o@yahoo.com); Harry Steiner (harry109@aol.com); Jack Calbeck (calbeckj@citrus.k12.fl.us); jane Perrin (jcsperrinmd@sbcglobal.net); Jerry Morton (JerrMorton@aol.com); Jessie Gourlie (gourliej@thirdplanetwind.com); Jim Collins (jimmiekey22@yahoo.com); Jimmie Smith (Jimmie.Smith@myfloridahouse.gov); Joe Calamari; John Lord (jclord109@yahoo.com); John Mayo (freedomway1@gmail.com); Karen Johnstone (kjohns213@sbcglobal.net); Kim Caldwell (caldwell.kimberly@yahoo.com); Kim Dinkins (kim.dinkins@marioncountyfl.org); Linda Pierce (tpierce35@tampabay.rr.com); Linda Vanderveen (hernandoaudubon@yahoo.com); Mary Anne Lynn (mlynn1978@tampabay.rr.com); Matthew Corona (mcorona1@tampabay.rr.com); Max Rhinesmith (rhinesmith@webtv.net); Amber Breland; Andy Houston (ahouston@crystalriverfl.org); Art Yerian (Al.Yerian@dep.state.fl.us); Ben Weiss; Beth Hovinde; Brad Thorpe (brad.thorpe@bocc.citrus.fl.us); Courtney Edwards (cedwards@savethemanatee.org); Dale Jones (Jones@MyFWC.com); Dana Bryan (dana.bryan@dep.state.fl.us); Darrell Snedecor; David Hamilton (countyadministrator@hernandocounty.us); David Hankla (david_hankla@fws.gov); Don Wright (wright@sura.org); Dusty McDevitt (mcdevitt@usgs.gov); Ed Call (marvin.call@MyFWC.com); Eric Nagid (eric.nagid@MyFWC.com); FFWCC MFLs Review E-Mail Address (fwcconservationplanningservices@myfwc.com); J. J. Kenney (jj.kenney@bocc.citrus.fl.us); Jennene Norman-Vacha (jnvacha@ci.brooksville.fl.us); Joyce_Kleen@fws.gov; Kandi Harper (kandi.harper@bocc.citrus.fl.us); Keith Ramos (Keith.Ramos@fws.gov); Kent Smith (kent.smith2@myfwc.com); Kevin Grimsley (kjgrims@usgs.gov); Michael Lusk (Michael_Lusk@fws.gov); Mitchell Newberger (mnewberger@verizon.net); Nick Robbins (Nick.Robbins@dep.state.fl.us); Nicole Adimey (Nicole_Adimey@fws.gov); Paul Thomas (paulw.thomas@MyFWC.com); Ron Mezich (ron.mezich@MyFWC.com); Shelly Yaun (shelly.yaun@dep.state.fl.us); Toby Brewer (Toby.Brewer@dep.state.fl.us); Tracy Colson; Wallace, Traci; Adkins, Jim; Bitter, Jim; Bryant, Richard; Cantero, Vince; Carpenter, Paul; Daniels, Chase; Dueker, Duane; Gramling, Hugh; Harrelson, Cathy; Hubbell, Pete; Johnson, Eric; Keim, Robert; Kincaid, Todd; Kline, Allen; Knight, Bob; Knight, Robert; Knudson, Ross; Overa, Tom; Owen, Rick; Parrow, Liz; Rolf Auermann (rauerman@tampabay.rr.com); Rusnak, Teddi; Tarochinoe, Joseph; Watkins, Priscilla; Watrous, Russell; Wilson, Roger

Cc: Amy K. Harroun; Barbara Matrone; Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Gary E. Williams; Jay Yingling; Karen Lloyd; Ken Weber; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez

Subject: RE: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES

Date: Tuesday, February 07, 2012 12:46:38 PM

Mr. Johnson - Regarding your email of January 19, I'd like to clarify a few points for you and those on your distribution list and I have appended your email for continuity. The proposed language to amend F.A.C. 40D-8 that was cited in the District's January 19 response is over 14 months old. As stated, it was the proposed rule amendment in November 2010 and can be found on page 34 of the Governing Board Agenda package for the November 2010 meeting. (It can be found at this url http://www.swfwmd.state.fl.us /calendar/2011/11/.) I am not aware of the exact date, but the agenda package was made public and posted on the District's web site in mid-November 2010. The language establishing the minimum flows and levels (MFLs) as a percent of the previous day's flow that was in the draft rule amendment for the Chassahowitzka River system is not new and is included in many of the District's adopted MFLs rules (See F.A.C. 40D – 8), including Upper

Hillsborough, Upper Peace, Middle Peace, Lower Peace, Myakka, Braden (freshwater), Upper Alafia, Lower Alafia, Weeki Wachee and the Anclote rivers. I would further add that the District is in the process of evaluating minimum flow recommendations for the Chassahowitzka River system, and proposed rule amendments for the system are similarly being reviewed.

Contrary to the suppositions advanced in your e-mail, it is not the District's intent to confuse stakeholders through semantics or "*legal jargon about amending a legal definitions by rule changes"* and the motivation to establish MFLs is not to "*just keep on pumping the aquifer*." We are developing MFLs for the Chassahowitzka River system and other priority water bodies to prevent significant harm associated with further withdrawals and are endeavoring to do so in as clear a manner as possible.

In your email, you noted that the Chassahowitzka is a spring-fed river and compared that to the surface water withdrawal example that I provided. I think it may be possible that you are confusing the source of water (spring-fed vs. surface runoff systems) with the mechanism of withdrawing water. In a runoff-dominated system without a significant input from groundwater, the only mechanism for removing water is by pumping directly from the surface water. In a ground-water dominated system, water can be removed by pumping the groundwater or by pumping directly from the surface water. Examples of a surface water withdrawal from a spring-fed system are the permit held by City of Tampa to withdraw water from Sulphur Springs and a permit held by Crystal Springs Preserve LLC to withdraw water from Crystal Springs. Note that the District does not anticipate the issuance of surface water withdrawals from the Chassahowitzka River system.

We will continue to evaluate compliance with the proposed MFLs for the Chassahowitzka and Homosassa River systems by determining groundwater withdrawal impacts to springflow through the use of groundwater flow modeling and other statistical analyses. While not anticipated at this time, we would evaluate any future direct surface water withdrawal in conjunction with existing groundwater impacts to ensure compliance with the proposed MFLs once adopted. In other words, staff would evaluate the effect on springflow from a combination of a direct surface water withdrawal along with existing groundwater use so that the total impact does not exceed the allowable percentages. Compliance with minimum flows that are established for the Chassahowitzka River system will be evaluated at a minimum on an annual basis through use of the Northern District Groundwater flow model and evaluation of rainfall-flow relationships. Compliance with the minimum flows may be also be evaluated whenever a permit application that may be expected to influence flows in the system is submitted to the District.

You also mentioned "recovery plans" and "Impaired Waters list" in your email. Please note that a flow recovery plan is different from a water quality recovery plan. Neither the Chassahowitzka nor the Homosassa system are in flow recovery as defined in 373.0421 F.S., and thus no recovery plan is needed for flow. Statute 373.0421-3.(2) reads in part:

> '(*2) If the existing flow or level in a water body is below, or is projected to fall within 20 years below, the applicable minimum flow or level established pursuant to s. 373.042, the department or governing board, as part of the regional water supply plan described in s. 373.0361, shall expeditiously implement a recovery or prevention strategy, which*

includes the development of additional water supplies or other actions, consistent with the authority granted by this chapter to:

(a) Achieve recovery to the established minimum flow or level as soon as practicable; or

(b) Prevent the existing flow or level from falling below the established minimum flow or level.'

The state list of Impaired Waters relates to water quality and as you have correctly identified, the Florida Department of Environmental Protection (FDEP) has the statutory authority to regulate pollutant discharges and water quality. If necessary, FDEP will establish a Total Maximum Daily Limit for each system followed by development of a Basin Management Action Plan, which is a recovery plan for water quality analogous to a flow recovery plan.

MGH
==========
Michael G. Heyl - Chief Environmental Scientist
Mike.Heyl@SWFWMD.state.fl.us or Mike.Heyl@WaterMatters.org
==========
SWFWMD/Ecologic Evaluation (7:00 am - 3:30 pm)
7601 U.S. Highway 301 1-813-985-7481 Ext 2211
Tampa, Fl. 33637-6759 1-813-987-6747 (Fax)
--------- Note : District Limit for Incoming Email is 5 Megabytes -------
An ftp site is available for larger attachments : http://ftp.swfwmd.state.fl.us/
This email consists of 100% recycled electrons. Consider the environment before printing
==========
Please Note: All e-mail sent to and from this address is automatically archived for records retention purposes in accordance with Florida's Public Records laws and is available for inspection by the public upon request.

From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Thursday, January 19, 2012 7:39 PM
To: Doug Leeper; Al Grubman (grubman1@gmail.com); Bill Geiger (bgeiger@cityofbrooksville.us); Bill Pouder (bill.pouder@myfwc.com); Boyd Blihovde (Boyd_Blihovde@fws.gov); Brad Rimbey (BWR.CRRC@tampabay.rr.com); Brent Whitley (brentwhitley@sierra-properties.com); Brockway, Alys (abrockway@co.hernando.fl.us); Dennis D. Dutcher (Dennis3ds@aol.com); Frank DiGiovanni (administration@inverness-fl.gov); Greenwood, Kathleen (Kathleen.Greenwood@dep.state.fl.us); Helen Spive; Hilliard, Dan (2buntings@comcast.net); Hoehn, Ted; Hope Corona (hopecorona@tampabay.rr.com); Jim Farley (jfarley682@aol.com); Katie Tripp (ktripp@savethemanatee.org); Norman Hopkins (norman@amyhrf.org); Rebecca Bays (rebecca.bays@bocc.citrus.fl.us); Richard Kane (rkane@usgs.gov); Richard Radacky (rradacky@cityofbrooksville.us); Ron Miller (rmille76@tampabay.rr.com); Sarah Tenison (cityofweekiwachee@yahoo.com); Sulllivan, Jack (jsullivan@carltonfields.com); Voyles, Carolyn (Carolyn.Voyles@dep.state.fl.us); Whitey Markle (whmarkle@gmail.com); (janicehowie@aol.com); Abdon Sidibie (asidibie@chronicle.online.com); Alex McPherson (aamcpherson@msn.com); Ann - 2 Hodgson (ahodgson@gmail.com); Ann Hodgson (ahodgson@audubon.org); Bernard Berauer (bfberauer@aol.com); Beverly Overa (boverly@tampabay.rr.com); Bill Garvin (wgarvin@tampabay.rr.com); Bob Caldwell (Bobcaldwell51@yahoo.com); Brack Barker (brack154@msn.com); Carl Mattthai (thebabesmimi@gmail.com); Casey, Emily (fcnwr@atlantic.net); Charles Dean (dean.charles.web@flsenate.gov); Charles Stonerock (katcha.stonerock3@gmail.com); Chris Safos (chrissafos@embarqmail.com); Czerwinski, Mike (mczerwin@tampabay.rr.com); Darlene Herth (2cetechnology21@gmail.com); Darrell Snedecor (president@citruscountyaudubon.com); Don Hiers (dhiers3@gmail.com); Douglas Dame (doug_dame@yahoo.com); Elaine Luther (barneyandcap@hotmail.com); Emily Casey (ecasey21@hotmail.com); Emma Knight (eknight@wetlandsolutionsinc.com); George Harbin (gharbin@tampabay.rr.com); George

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Cc: Amy K. Harroun; Barbara Matrone; Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Gary E. Williams; Jay Yingling; Karen Lloyd; Ken Weber; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject: RE: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES

Please note the words in Doug's e-mail I have made red lettering and yellow highlight.

If you are concerned about the future of Homosassa, Chassahowitzka, Crystal or any other spring fed river in the SWFWMD this is ESSENTIAL READING.

Baseline flows will be no more if a draft rule is approved, at least as I read this response from SWFWMD (key part copied into this message).

The gap in the quote is a graph which does not copy into the e-mail text so go to the attachment for the complete response.

Yellow hightlight added.

QUOTE
Dear Mr. Johnson –
Doug Leeper has asked that I respond to your recent comments (January 12, 2012 e-mail)
about flows in the Chassahowitzka River and the application of the proposed minimum flows
and levels (MFL) for the river system. The proposed Chassahowitzka MFL is a percentage of
flow, not a fixed number and is not directly related to a long-term median. The MFL is a percent
of flow and the actual withdrawal varies with the flow, not a historic median. As discussed later,
the 63 cfs flow rate is not an MFL criterion.
The percent of flow approach is easier to understand where there is a surface water withdrawal.
A draft 2010 MFL rule for the system read in part (emphasis added):
"40D-8.041 Minimum Flows
(1) – (15) No change.
(16) Minimum Flows for the Chassahowitzka River System.
(b) Minimum Flow for the Chassahowitzka River System is 89% of the natural flow as measured at the United States Geological Survey (USGS) Gage Chassahowitzka River near Homosassa (Gage No. 02310650). The minimum flow at any point below this Gage is based on the previous day's natural flow at that point minus 11 percent."
If this rule were applied to a surface water withdrawal over the 2010 and 2011 flows that you
evaluated, the results would appear as below. Each day is multiplied by 89% to determine how
much flow must remain. The 63 cfs is not identified in the proposed 2010 rule and, is not a
recommended MFL, nor does it figure into the application of the MFL rule.

GRAPH GAP

In light of your comments and in rereading the Executive Summary of the November 2010 draft
report on proposed MFL for the Chassahowitzka River system, I do agree that the meaning of
the word "baseline" should be improved and clarified. I will endeavor to do so in final report.
Some discussion about the origin and application of the 63 cfs in evaluating the Chassahowitzka MFL is warranted.

This value represents the median of daily flows from
1/1/1967 through 11/29/2007. Development of this data set is documented in Chapter 10.1 of
the November draft report. The data set reflects measured and estimated flows slightly
downstream of the Main spring at the present location of the USGS gage

02310650. These
flows do not include contributions from Crab Creek and other sources further downstream.

By definition, half of the daily values are greater than the median value and half are less than
the median. In this case, the record exhibits a statistically significant declining trend that is
described in section 2.4 of the November draft report, so it should come as no surprise that the
majority of the flow values below the median have occurred in the more recent years. The
median flow is simply the “middle point” of a collection of flows, and was simply chosen to
represent typical flows in the Chassahowitzka.
It should be noted that ,provided the flow used in the MFL evaluation is within the range of
observed flows, linear responses to flow are unaffected by the initial choice of flow as shown in
the following illustration of hypothetical response. In the case of the proposed Chassahowitzka
MFL, the following metrics exhibited linear response to flow or salinity and thus are independent
of the initial flow value chosen for evaluation:
UNQUOTE

This response was to an e-mail I sent indicating 46% of the days in the last two year flows into the Chassahowitzka were below the minimum flows set in the draft report. A similar e-mail sent a couple of days earlier indicated on 84% of the days in the last two years flows into the Homosassa were below the minimum flows set in the corresponding draft report.

It is worrying to contemplate the agenda are these ideas to confuse us by;

- semantics eg *(From above) If this rule were applied to a surface water withdrawal over the 2010 and 2011 flows that you evaluated, the results would appear as below*...Chass is a spring fed river, or
- legal jargon about amending a legal definitions by rule changes.

Is it to just keep on pumping the aquifer?

The hypothetical fish reduction graph, if you read the attachment, is…….

Some serious common sense questions need to be answered. What is the minimum flow and what criteria say it has been reached; day, week, month? What are the recovery plans for these rivers (Chassahowitzka and SE Fork of Homosassa are on the Impaired Waters list by Department of Environmental Protection)?

Martyn
I guess this will upset a lot of people, but this needs nipping in the bud. I trust there will be a rethink of this matter and a fast correction made. I could have posted this

on the working group web site but how many would have read it.

From:	Doug Leeper
To:	Martyn Johnson (martynellijay@hotmail.com)
Bcc:	Cara S. Martin; Chris Zajac; Christopher Pettit; Darcy A. Brune; Dave Dewitt; Doug Leeper; Gary E. Williams; Jay Yingling; Karen West; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Michael Molligan; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Tammy Hinkle; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject:	E-Mail on Homosassa Specific Conductance
Date:	Tuesday, February 07, 2012 1:36:12 PM
Attachments:	E-Mail from MJohnson - Specific Conductance Homosassa Main Spring 28jan2012.pdf

Martyn:

I'm writing to acknowledge that the District received your e-mail concerning specific conductance measurement in the Homosassa River system that was sent to R. Rodriguez and me on January 28, 2012.

As always, I thank you for your input and note that your comments and all other public input on the minimum flows and levels development process will be reviewed by staff and made available for consideration by the Governing Board and other persons interested in the Homosassa River system.

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

From:	Mike Heyl
To:	Doug Leeper
Subject:	FW: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES
Date:	Tuesday, February 07, 2012 1:20:03 PM

Another !!!!

MGH
==========
Michael G. Heyl - Chief Environmental Scientist
Mike.Heyl@SWFWMD.state.fl.us or Mike.Heyl@WaterMatters.org
==========
SWFWMD/Ecologic Evaluation (7:00 am - 3:30 pm)
7601 U.S. Highway 301 1-813-985-7481 Ext 2211
Tampa, Fl. 33637-6759 1-813-987-6747 (Fax)
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From: Brent Whitley [mailto:BrentWhitley@Sierra-Properties.com]
Sent: Tuesday, February 07, 2012 1:12 PM
To: Mike Heyl
Subject: RE: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES

At some point I hope these folks conclude that your team is not dishonest. I am sure that gets old for you and I sympathize with you guys.

Brent

From: Mike Heyl [mailto:Mike.Heyl@swfwmd.state.fl.us]
Sent: Tuesday, February 07, 2012 12:47 PM
To: Alan Martyn Johnson; Doug Leeper; Al Grubman (grubman1@gmail.com); Bill Geiger (bgeiger@cityofbrooksville.us); Bill Pouder (bill.pouder@myfwc.com); Boyd Blihovde (Boyd_Blihovde@fws.gov); Brad Rimbey (BWR.CRRC@tampabay.rr.com); Brent Whitley; Brockway, Alys (abrockway@co.hernando.fl.us); Dennis D. Dutcher (Dennis3ds@aol.com); Frank DiGiovanni (administration@inverness-fl.gov); Greenwood, Kathleen (Kathleen.Greenwood@dep.state.fl.us); Helen Spive; Hilliard, Dan (2buntings@comcast.net); Hoehn, Ted; Hope Corona (hopecorona@tampabay.rr.com); Jim Farley (jfarley682@aol.com); Katie Tripp (ktripp@savethemanatee.org); Norman Hopkins (norman@amyhrf.org); Rebecca Bays (rebecca.bays@bocc.citrus.fl.us); Richard Kane (rkane@usgs.gov); Richard Radacky (rradacky@cityofbrooksville.us); Ron Miller (rmille76@tampabay.rr.com); Sarah Tenison (cityofweekiwachee@yahoo.com); Sulllivan, Jack (jsullivan@carltonfields.com); Voyles, Carolyn (Carolyn.Voyles@dep.state.fl.us); Whitey Markle (whmarkle@gmail.com); (janicehowie@aol.com); Abdon Sidibie (asidibie@chronicle.online.com); Alex McPherson (aamcpherson@msn.com); Ann - 2 Hodgson (ahodgson@gmail.com); Ann Hodgson (ahodgson@audubon.org); Bernard Berauer (bfberauer@aol.com); Beverly Overa (boverly@tampabay.rr.com); Bill Garvin (wgarvin@tampabay.rr.com); Bob Caldwell (Bobcaldwell51@yahoo.com); Brack Barker (brack154@msn.com); Carl Mattthai (thebabesmimi@gmail.com); Casey, Emily (fcnwr@atlantic.net); Charles Dean (dean.charles.web@flsenate.gov); Charles Stonerock (katcha.stonerock3@gmail.com); Chris Safos (chrissafos@embarqmail.com); Czerwinski, Mike (mczerwin@tampabay.rr.com); Darlene

Herth (2cetechnology21@gmail.com); Darrell Snedecor (president@citruscountyaudubon.com); Don Hiers (dhiers3@gmail.com); Douglas Dame (doug_dame@yahoo.com); Elaine Luther (barneyandcap@hotmail.com); Emily Casey (ecasey21@hotmail.com); Emma Knight (eknight@wetlandsolutionsinc.com); George Harbin (gharbin@tampabay.rr.com); George McClog (classof47@gmail.com); Gorgon O'Connor (gorgon_o@yahoo.com); Harry Steiner (harry109@aol.com); Jack Calbeck (calbeckj@citrus.k12.fl.us); jane Perrin (jcsperrinmd@sbcglobal.net); Jerry Morton (JerrMorton@aol.com); Jessie Gourlie (gourliej@thirdplanetwind.com); Jim Collins (jimmiekey22@yahoo.com); Jimmie Smith (Jimmie.Smith@myfloridahouse.gov); Joe Calamari; John Lord (jclord109@yahoo.com); John Mayo (freedomway1@gmail.com); Karen Johnstone (kjohns213@sbcglobal.net); Kim Caldwell (caldwell.kimberly@yahoo.com); Kim Dinkins (kim.dinkins@marioncountyfl.org); Linda Pierce (tpierce35@tampabay.rr.com); Linda Vanderveen (hernandoaudubon@yahoo.com); Mary Anne Lynn (mlynn1978@tampabay.rr.com); Matthew Corona (mcorona1@tampabay.rr.com); Max Rhinesmith (rhinesmith@webtv.net); Amber Breland; Andy Houston (ahouston@crystalriverfl.org); Art Yerian (Al.Yerian@dep.state.fl.us); Ben Weiss; Beth Hovinde; Brad Thorpe (brad.thorpe@bocc.citrus.fl.us); Courtney Edwards (cedwards@savethemanatee.org); Dale Jones (Jones@MyFWC.com); Dana Bryan (dana.bryan@dep.state.fl.us); Darrell Snedecor; David Hamilton (countyadministrator@hernandocounty.us); David Hankla (david_hankla@fws.gov); Don Wright (wright@sura.org); Dusty McDevitt (mcdevitt@usgs.gov); Ed Call (marvin.call@MyFWC.com); Eric Nagid (eric.nagid@MyFWC.com); FFWCC MFLs Review E-Mail Address (fwcconservationplanningservices@myfwc.com); J. J. Kenney (jj.kenney@bocc.citrus.fl.us); Jennene Norman-Vacha (jnvacha@ci.brooksville.fl.us); Joyce_Kleen@fws.gov; Kandi Harper (kandi.harper@bocc.citrus.fl.us); Keith Ramos (Keith.Ramos@fws.gov); Kent Smith (kent.smith2@myfwc.com); Kevin Grimsley (kjgrims@usgs.gov); Michael Lusk (Michael_Lusk@fws.gov); Mitchell Newberger (mnewberger@verizon.net); Nick Robbins (Nick.Robbins@dep.state.fl.us); Nicole Adimey (Nicole_Adimey@fws.gov); Paul Thomas (paulw.thomas@MyFWC.com); Ron Mezich (ron.mezich@MyFWC.com); Shelly Yaun (shelly.yaun@dep.state.fl.us); Toby Brewer (Toby.Brewer@dep.state.fl.us); Tracy Colson; Wallace, Traci; Adkins, Jim; Bitter, Jim; Bryant, Richard; Cantero, Vince; Carpenter, Paul; Daniels, Chase; Dueker, Duane; Gramling, Hugh; Harrelson, Cathy; Hubbell, Pete; Johnson, Eric; Keim, Robert; Kincaid, Todd; Kline, Allen; Knight, Bob; Knight, Robert; Knudson, Ross; Overa, Tom; Owen, Rick; Parrow, Liz; Rolf Auermann (rauerman@tampabay.rr.com); Rusnak, Teddi; Tarochinoe, Joseph; Watkins, Priscilla; Watrous, Russell; Wilson, Roger
Cc: Amy K. Harroun; Barbara Matrone; Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Gary E. Williams; Jay Yingling; Karen Lloyd; Ken Weber; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject: RE: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES

Mr. Johnson - Regarding your email of January 19, I'd like to clarify a few points for you and those on your distribution list and I have appended your email for continuity. The proposed language to amend F.A.C. 40D-8 that was cited in the District's January 19 response is over 14 months old. As stated, it was the proposed rule amendment in November 2010 and can be found on page 34 of the Governing Board Agenda package for the November 2010 meeting. (It can be found at this url http://www.swfwmd.state.fl.us /calendar/2011/11/.) I am not aware of the exact date, but the agenda package was made public and posted on the District's web site in mid-November 2010. The language establishing the minimum flows and levels (MFLs) as a percent of the previous day's flow that was in the draft rule amendment for the Chassahowitzka River system is not new and is included in many of the District's adopted MFLs rules (See F.A.C. 40D – 8), including Upper Hillsborough, Upper Peace, Middle Peace, Lower Peace, Myakka, Braden (freshwater), Upper Alafia, Lower Alafia, Weeki Wachee and the Anclote rivers. I would further add that the District is in the process of evaluating minimum flow recommendations for the Chassahowitzka River system, and proposed rule amendments for the system are similarly being reviewed.

Contrary to the suppositions advanced in your e-mail, it is not the District's intent to confuse stakeholders through semantics or "*legal jargon about amending a legal definitions by rule*

changes" and the motivation to establish MFLs is not to "*just keep on pumping the aquifer*." We are developing MFLs for the Chassahowitzka River system and other priority water bodies to prevent significant harm associated with further withdrawals and are endeavoring to do so in as clear a manner as possible.

In your email, you noted that the Chassahowitzka is a spring-fed river and compared that to the surface water withdrawal example that I provided. I think it may be possible that you are confusing the source of water (spring-fed vs. surface runoff systems) with the mechanism of withdrawing water. In a runoff-dominated system without a significant input from groundwater, the only mechanism for removing water is by pumping directly from the surface water. In a ground-water dominated system, water can be removed by pumping the groundwater or by pumping directly from the surface water. Examples of a surface water withdrawal from a spring-fed system are the permit held by City of Tampa to withdraw water from Sulphur Springs and a permit held by Crystal Springs Preserve LLC to withdraw water from Crystal Springs. Note that the District does not anticipate the issuance of surface water withdrawals from the Chassahowitzka River system.

We will continue to evaluate compliance with the proposed MFLs for the Chassahowitzka and Homosassa River systems by determining groundwater withdrawal impacts to springflow through the use of groundwater flow modeling and other statistical analyses. While not anticipated at this time, we would evaluate any future direct surface water withdrawal in conjunction with existing groundwater impacts to ensure compliance with the proposed MFLs once adopted. In other words, staff would evaluate the effect on springflow from a combination of a direct surface water withdrawal along with existing groundwater use so that the total impact does not exceed the allowable percentages. Compliance with minimum flows that are established for the Chassahowitzka River system will be evaluated at a minimum on an annual basis through use of the Northern District Groundwater flow model and evaluation of rainfall-flow relationships. Compliance with the minimum flows may be also be evaluated whenever a permit application that may be expected to influence flows in the system is submitted to the District.

You also mentioned "recovery plans" and "Impaired Waters list" in your email. Please note that a flow recovery plan is different from a water quality recovery plan. Neither the Chassahowitzka nor the Homosassa system are in flow recovery as defined in 373.0421 F.S., and thus no recovery plan is needed for flow. Statute 373.0421-3.(2) reads in part:

> '(*2) If the existing flow or level in a water body is below, or is projected to fall within 20 years below, the applicable minimum flow or level established pursuant to s. 373.042, the department or governing board, as part of the regional water supply plan described in s. 373.0361, shall expeditiously implement a recovery or prevention strategy, which includes the development of additional water supplies or other actions, consistent with the authority granted by this chapter to:*
>
> *(a) Achieve recovery to the established minimum flow or level as soon as practicable; or*
>
> *(b) Prevent the existing flow or level from falling below the established minimum flow or level.'*

The state list of Impaired Waters relates to water quality and as you have correctly identified, the Florida Department of Environmental Protection (FDEP) has the statutory authority to regulate pollutant discharges and water quality. If necessary, FDEP will establish a Total Maximum Daily Limit for each system followed by development of a Basin Management Action Plan, which is a recovery plan for water quality analogous to a flow recovery plan.

MGH
==========
Michael G. Heyl - Chief Environmental Scientist
Mike.Heyl@SWFWMD.state.fl.us or Mike.Heyl@WaterMatters.org
==========
SWFWMD/Ecologic Evaluation (7:00 am - 3:30 pm)
7601 U.S. Highway 301 1-813-985-7481 Ext 2211
Tampa, Fl. 33637-6759 1-813-987-6747 (Fax)
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==========
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From: Alan Martyn Johnson [mailto:martynellijay@hotmail.com]
Sent: Thursday, January 19, 2012 7:39 PM
To: Doug Leeper; Al Grubman (grubman1@gmail.com); Bill Geiger (bgeiger@cityofbrooksville.us); Bill Pouder (bill.pouder@myfwc.com); Boyd Blihovde (Boyd_Blihovde@fws.gov); Brad Rimbey (BWR.CRRC@tampabay.rr.com); Brent Whitley (brentwhitley@sierra-properties.com); Brockway, Alys (abrockway@co.hernando.fl.us); Dennis D. Dutcher (Dennis3ds@aol.com); Frank DiGiovanni (administration@inverness-fl.gov); Greenwood, Kathleen (Kathleen.Greenwood@dep.state.fl.us); Helen Spive; Hilliard, Dan (2buntings@comcast.net); Hoehn, Ted; Hope Corona (hopecorona@tampabay.rr.com); Jim Farley (jfarley682@aol.com); Katie Tripp (ktripp@savethemanatee.org); Norman Hopkins (norman@amyhrf.org); Rebecca Bays (rebecca.bays@bocc.citrus.fl.us); Richard Kane (rkane@usgs.gov); Richard Radacky (rradacky@cityofbrooksville.us); Ron Miller (rmille76@tampabay.rr.com); Sarah Tenison (cityofweekiwachee@yahoo.com); Sulllivan, Jack (jsullivan@carltonfields.com); Voyles, Carolyn (Carolyn.Voyles@dep.state.fl.us); Whitey Markle (whmarkle@gmail.com); (janicehowie@aol.com); Abdon Sidibie (asidibie@chronicle.online.com); Alex McPherson (aamcpherson@msn.com); Ann - 2 Hodgson (ahodgson@gmail.com); Ann Hodgson (ahodgson@audubon.org); Bernard Berauer (bfberauer@aol.com); Beverly Overa (boverly@tampabay.rr.com); Bill Garvin (wgarvin@tampabay.rr.com); Bob Caldwell (Bobcaldwell51@yahoo.com); Brack Barker (brack154@msn.com); Carl Mattthai (thebabesmimi@gmail.com); Casey, Emily (fcnwr@atlantic.net); Charles Dean (dean.charles.web@flsenate.gov); Charles Stonerock (katcha.stonerock3@gmail.com); Chris Safos (chrissafos@embarqmail.com); Czerwinski, Mike (mczerwin@tampabay.rr.com); Darlene Herth (2cetechnology21@gmail.com); Darrell Snedecor (president@citruscountyaudubon.com); Don Hiers (dhiers3@gmail.com); Douglas Dame (doug_dame@yahoo.com); Elaine Luther (barneyandcap@hotmail.com); Emily Casey (ecasey21@hotmail.com); Emma Knight (eknight@wetlandsolutionsinc.com); George Harbin (gharbin@tampabay.rr.com); George McClog (classof47@gmail.com); Gorgon O'Connor (gorgon_o@yahoo.com); Harry Steiner (harry109@aol.com); Jack Calbeck (calbeckj@citrus.k12.fl.us); jane Perrin (jcsperrinmd@sbcglobal.net); Jerry Morton (JerrMorton@aol.com); Jessie Gourlie (gourliej@thirdplanetwind.com); Jim Collins (jimmiekey22@yahoo.com); Jimmie Smith (Jimmie.Smith@myfloridahouse.gov); Joe Calamari; John Lord (jclord109@yahoo.com); John Mayo (freedomway1@gmail.com); Karen Johnstone (kjohns213@sbcglobal.net); Kim Caldwell (caldwell.kimberly@yahoo.com); Kim Dinkins (kim.dinkins@marioncountyfl.org); Linda Pierce (tpierce35@tampabay.rr.com); Linda Vanderveen (hernandoaudubon@yahoo.com); Mary Anne Lynn (mlynn1978@tampabay.rr.com); Matthew Corona (mcorona1@tampabay.rr.com); Max

Rhinesmith (rhinesmith@webtv.net); Amber Breland; Andy Houston (ahouston@crystalriverfl.org); Art Yerian (Al.Yerian@dep.state.fl.us); Ben Weiss; Beth Hovinde; Brad Thorpe (brad.thorpe@bocc.citrus.fl.us); Courtney Edwards (cedwards@savethemanatee.org); Dale Jones (Jones@MyFWC.com); Dana Bryan (dana.bryan@dep.state.fl.us); Darrell Snedecor; David Hamilton (countyadministrator@hernandocounty.us); David Hankla (david_hankla@fws.gov); Don Wright (wright@sura.org); Dusty McDevitt (mcdevitt@usgs.gov); Ed Call (marvin.call@MyFWC.com); Eric Nagid (eric.nagid@MyFWC.com); FFWCC MFLs Review E-Mail Address (fwcconservationplanningservices@myfwc.com); J. J. Kenney (jj.kenney@bocc.citrus.fl.us); Jennene Norman-Vacha (jnvacha@ci.brooksville.fl.us); Joyce_Kleen@fws.gov; Kandi Harper (kandi.harper@bocc.citrus.fl.us); Keith Ramos (Keith.Ramos@fws.gov); Kent Smith (kent.smith2@myfwc.com); Kevin Grimsley (kjgrims@usgs.gov); Michael Lusk (Michael_Lusk@fws.gov); Mitchell Newberger (mnewberger@verizon.net); Nick Robbins (Nick.Robbins@dep.state.fl.us); Nicole Adimey (Nicole_Adimey@fws.gov); Paul Thomas (paulw.thomas@MyFWC.com); Ron Mezich (ron.mezich@MyFWC.com); Shelly Yaun (shelly.yaun@dep.state.fl.us); Toby Brewer (Toby.Brewer@dep.state.fl.us); Tracy Colson; Wallace, Traci; Adkins, Jim; Bitter, Jim; Bryant, Richard; Cantero, Vince; Carpenter, Paul; Daniels, Chase; Dueker, Duane; Gramling, Hugh; Harrelson, Cathy; Hubbell, Pete; Johnson, Eric; Keim, Robert; Kincaid, Todd; Kline, Allen; Knight, Bob; Knight, Robert; Knudson, Ross; Overa, Tom; Owen, Rick; Parrow, Liz; Rolf Auermann (rauerman@tampabay.rr.com); Rusnak, Teddi; Tarochinoe, Joseph; Watkins, Priscilla; Watrous, Russell; Wilson, Roger
Cc: Amy K. Harroun; Barbara Matrone; Cara S. Martin; Chris Zajac; Darcy A. Brune; Dave Dewitt; Gary E. Williams; Jay Yingling; Karen Lloyd; Ken Weber; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject: RE: Update - Chassahowitzka and Homosassa Minimum Flows READ THE WORDS CAREFULLY THIS IS ABOUT RULE CHANGES

Please note the words in Doug's e-mail I have made red lettering and yellow highlight.

If you are concerned about the future of Homosassa, Chassahowitzka, Crystal or any other spring fed river in the SWFWMD this is ESSENTIAL READING.

Baseline flows will be no more if a draft rule is approved, at least as I read this response from SWFWMD (key part copied into this message).

The gap in the quote is a graph which does not copy into the e-mail text so go to the attachment for the complete response.

Yellow hightlight added.

QUOTE
Dear Mr. Johnson –
Doug Leeper has asked that I respond to your recent comments (January 12, 2012 e-mail)
about flows in the Chassahowitzka River and the application of the proposed minimum flows
and levels (MFL) for the river system. The proposed Chassahowitzka MFL is a

percentage of
flow, not a fixed number and is not directly related to a long-term median. The MFL is a percent
of flow and the actual withdrawal varies with the flow, not a historic median. As discussed later,
the 63 cfs flow rate is not an MFL criterion.
The percent of flow approach is easier to understand where there is a surface water withdrawal.
A draft 2010 MFL rule for the system read in part (emphasis added):
"40D-8.041 Minimum Flows
(1) – (15) No change.
(16) Minimum Flows for the Chassahowitzka River System.
(b) Minimum Flow for the Chassahowitzka River System is 89% of the natural flow as measured at the United States Geological Survey (USGS) Gage Chassahowitzka River near Homosassa (Gage No. 02310650). The minimum flow at any point below this Gage is based on the previous day's natural flow at that point minus 11 percent."
If this rule were applied to a surface water withdrawal over the 2010 and 2011 flows that you
evaluated, the results would appear as below. Each day is multiplied by 89% to determine how
much flow must remain. The 63 cfs is not identified in the proposed 2010 rule and, is not a
recommended MFL, nor does it figure into the application of the MFL rule.

GRAPH GAP

In light of your comments and in rereading the Executive Summary of the November 2010 draft
report on proposed MFL for the Chassahowitzka River system, I do agree that the meaning of
the word "baseline" should be improved and clarified. I will endeavor to do so in final report.
Some discussion about the origin and application of the 63 cfs in evaluating the Chassahowitzka MFL is warranted.

This value represents the median of daily flows from
1/1/1967 through 11/29/2007. Development of this data set is documented in Chapter 10.1 of
the November draft report. The data set reflects measured and estimated flows slightly
downstream of the Main spring at the present location of the USGS gage 02310650. These
flows do not include contributions from Crab Creek and other sources further downstream.

By definition, half of the daily values are greater than the median value and half are less than
the median. In this case, the record exhibits a statistically significant declining trend that is

described in section 2.4 of the November draft report, so it should come as no surprise that the
majority of the flow values below the median have occurred in the more recent years. The
median flow is simply the “middle point” of a collection of flows, and was simply chosen to
represent typical flows in the Chassahowitzka.
It should be noted that ,provided the flow used in the MFL evaluation is within the range of
observed flows, linear responses to flow are unaffected by the initial choice of flow as shown in
the following illustration of hypothetical response. In the case of the proposed Chassahowitzka
MFL, the following metrics exhibited linear response to flow or salinity and thus are independent
of the initial flow value chosen for evaluation:
UNQUOTE

This response was to an e-mail I sent indicating 46% of the days in the last two year flows into the Chassahowitzka were below the minimum flows set in the draft report. A similar e-mail sent a couple of days earlier indicated on 84% of the days in the last two years flows into the Homosassa were below the minimum flows set in the corresponding draft report.

It is worrying to contemplate the agenda are these ideas to confuse us by;

- semantics eg *(From above) If this rule were applied to a surface water withdrawal over the 2010 and 2011 flows that you evaluated, the results would appear as below*...Chass is a spring fed river, or
- legal jargon about amending a legal definitions by rule changes.

Is it to just keep on pumping the aquifer?

The hypothetical fish reduction graph, if you read the attachment, is…….

Some serious common sense questions need to be answered. What is the minimum flow and what criteria say it has been reached; day, week, month? What are the recovery plans for these rivers (Chassahowitzka and SE Fork of Homosassa are on the Impaired Waters list by Department of Environmental Protection)?

Martyn
I guess this will upset a lot of people, but this needs nipping in the bud. I trust there will be a rethink of this matter and a fast correction made. I could have posted this on the working group web site but how many would have read it.

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February 7, 2012

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 specific conductance measurement in the Homosassa River system

---

This memorandum documents correspondence between Mr. Martyn Johnson and Mr. Doug Leeper (with the District) concerning information sent by Mr. Johnson in an e-mail to Mr. Leeper and Mr. Rodriquez with the United States Geological Survey. The information pertains to the measurement of specific conductance 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 R. Rodriquez and Doug Leeper, Dated January 18, 2012
B - E-Mail from Doug Leeper to Martyn Johnson, Dated February 07, 2012

Attachment A

E-Mail and Attachments from Martyn Johnson to R. Rodriguez and Doug Leeper, Dated January 18, 2012

From: Alan Martyn Johnson
To: R Rodriguez; Doug Leeper
Cc: rake; Kevin J Grimsley; Ron Miller; Al Grubman; Brad Rimley; Norman Hopkins; Brent Whitley
Subject: Specific Conductance Homosassa Main Spring
Date: Saturday, January 28, 2012 9:03:41 AM
Attachments: Homosassa Springs Specific Conductance Graphs.doc
Homosassa Stage-SpecificC 30 days Jan 25.xls

Earlier this week the Homosassa State Park offered to allow me access to the park to sample water at the main spring in order to pursue/confirm my hypothesis regarding variations in the specific conductivity with the stage height.

Next time I am in Homosassa, mid February, I will agree the dates and sampling location. Presently the sampling plan is to sample hourly during park opening hours for three days (Monday Wednesday Friday) at a location as close as possible to the main vent. This should provide sufficient data to confirm the variation in specific conductance is in water emanating from the spring.

USGS are welcome to participate, or may want to pursue other plans to follow up as indicated in an e-mail last year.

The proposed sampling should confirm if the readings are the result of "stratification"; something I doubt given the flow from the main spring and the additional flow from Alligator Spring downstream of the gage site.

Background
Last August I pointed out cycling in the Specific Conductance data from the Homosassa Springs 02310678, suggesting the cycling was generally inverse to stage, that is the lower specific conductance water was discharging at higher stage. My thought was that this resulted from a change in the ratio of water flow from the three vents which combine some 30+ feet down in the main spring vent. This added to and may help explain the increasing trend for higher salinity water I noted in earlier e-mails regarding deterioration of the Homosassa River.

The responses I received were;

"When I look at the data I would say that specific conductance lags the peak gage height but is not inverse of stage. I can't say for sure why the lag but I think it is due to the hydraulics of the system. When the tide comes in some water will go into storage and this could be the reason behind the lag. You probably want to

look at the salinity changes when the tide is out and then note what kind of changes you see. I haven't really looked at this since it is outside the scope of our work orders."

"We're planning on performing a few cross-section conductance measurements to investigate this lag between the water level and conductance cycles. We'll see what those measurements reveal, but we do not believe it has anything to do with variations in flow rates between the vents. We believe this is caused by stratification of flow around the gage location."

The long term trend of increasing specific conductance was pointed out in a graph See Graph 1 in the attached word document. The graph is made difficult to read because of the high specific conductance readings associated with hurricanes. In Graph 2 I have removed the high readings that caused the scale in Graph 1 to be so large. This makes the trend easier to see.

Graph 3 in the word document shows the water levels at the Weeki Wachee Well for the years that specific conductance has been monitored at Homosassa Spring (started June 2004), when looking in more detail at the daily data it correlates with the peaks in minimum daily specific conductance occurring when the well level is lower.

Graph 4 shows the Weeki Wachee Well from 1966 when records started.
Water from the Homosassa main spring is deteriorating due to ingress of sea water most likely occurring because the hydraulic head form the aquifer is less; and so much so that this increased salinity alone may be creating conditions for the barnacle growth that local residents have seen in recent years.

In the attached Excel spreadsheet the specific conductance and stage height for the last 30 days is shown highlighted as follows;
Yellow specific conductance greater than 5400
Blue, specific conductance less than 4000
Red, high stage
Green, low stage

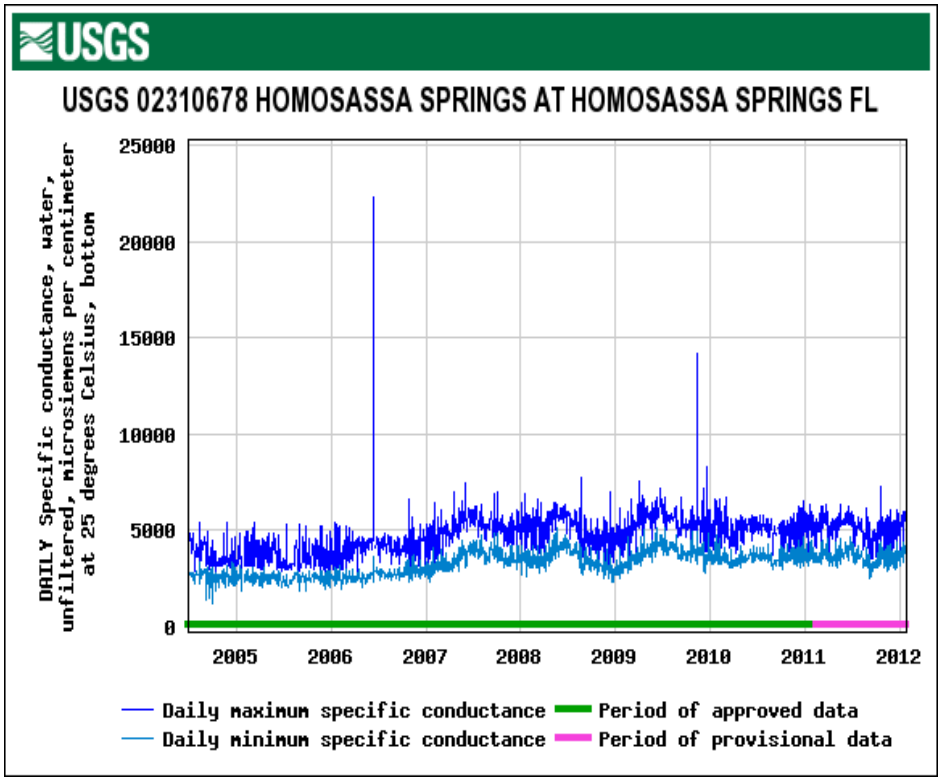
Low specific conductance is associated with high stage, unless the stage height is very low and limited/no salt water intrusion is occurring (Jan 3-5). The yellow high specific conductance occurs after stage heights have exceeded 3.5 feet and maximums occur as the stage is dropping which is indicative that the highest salinity water takes time to elute from the system. Dec 27-28 the stage height was over 4 ft. and the higher level of sea water intrusion (Spec Cond over 5000) can be seen to continue for over 12 hours. This demonstrates how sensitive the system has become.

You are welcome to make your own interpretation.

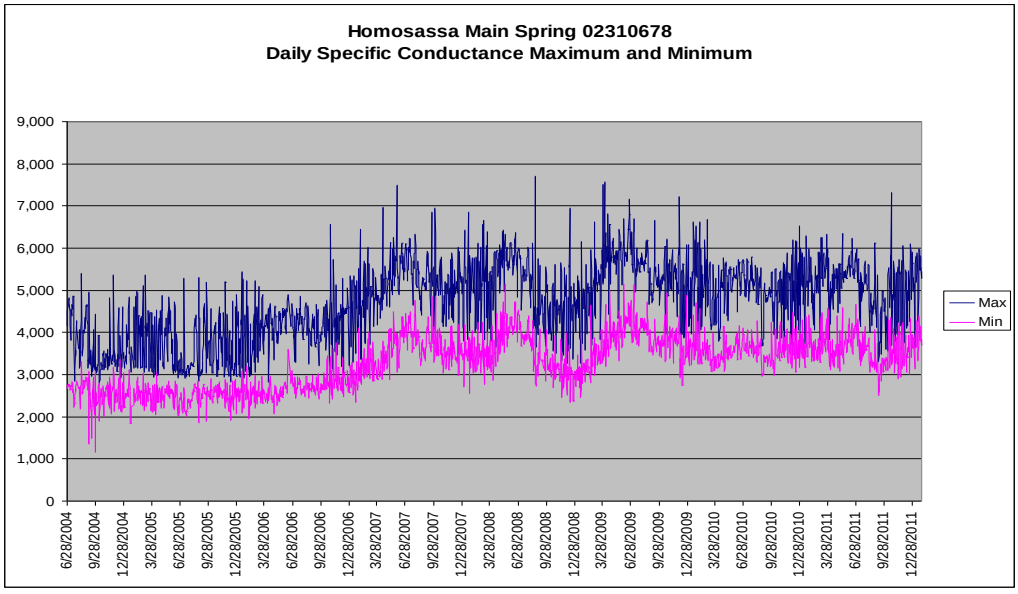
Martyn

E-Mail Attachment No. 1

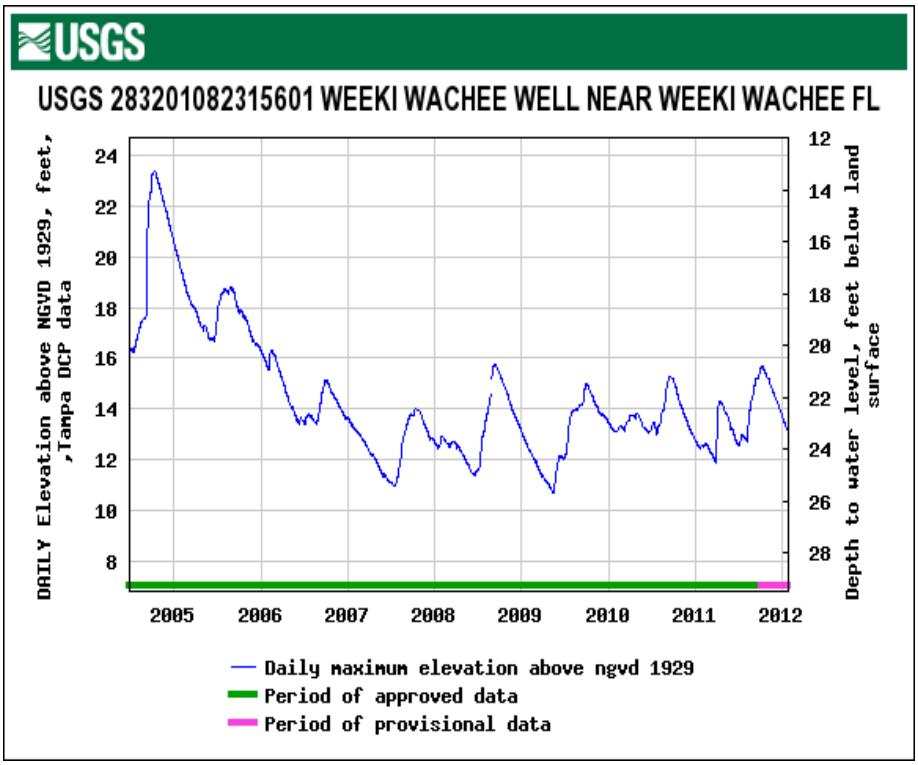
GRAPH 1



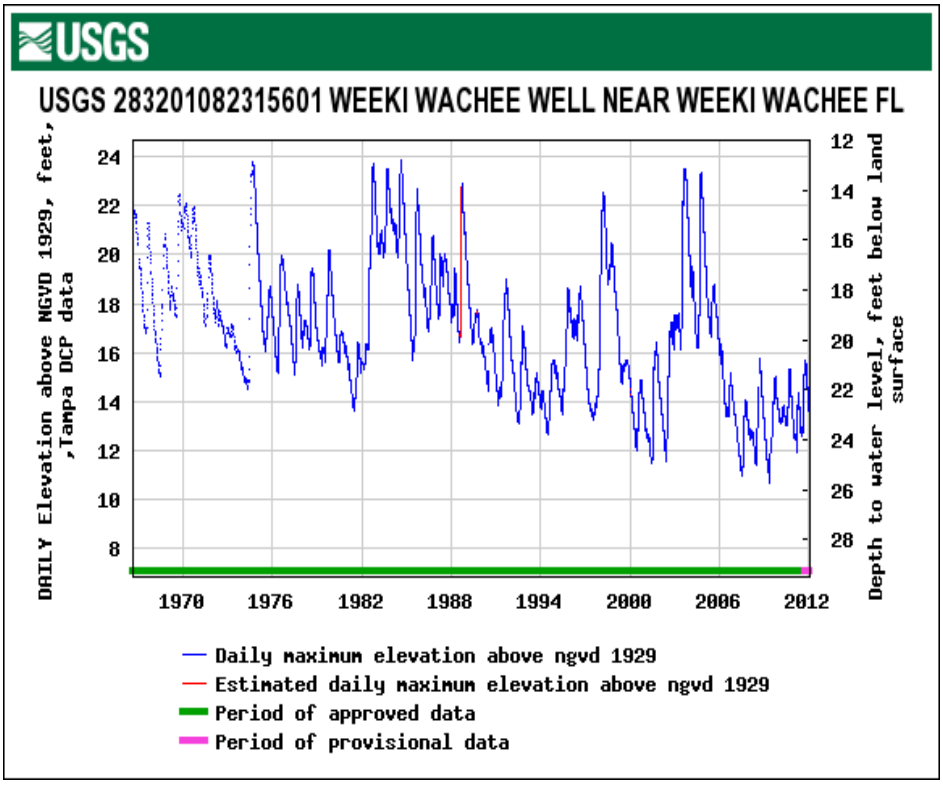
GRAPH 2



GRAPH 3



GRAPH 4



E-Mail Attachment No. 2

Date / Time	Gage height, feet,	Specif-ic conduc-tance, wat unf uS/cm @ 25 degC, bottom
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12/26/2011 00:15 EST	2.88[P]	4,420[P]
12/26/2011 00:30 EST	2.91[P]	4,360[P]
12/26/2011 00:45 EST	2.96[P]	4,300[P]
12/26/2011 01:00 EST	3.00[P]	4,270[P]
12/26/2011 01:15 EST	3.05[P]	4,220[P]
12/26/2011 01:30 EST	3.11[P]	4,210[P]
12/26/2011 01:45 EST	3.17[P]	4,150[P]
12/26/2011 02:00 EST	3.23[P]	4,110[P]
12/26/2011 02:15 EST	3.31[P]	4,070[P]
12/26/2011 02:30 EST	3.37[P]	4,060[P]
12/26/2011 02:45 EST	3.44[P]	4,040[P]
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12/28/2011 21:30 EST	2.89[P]	3,710[P]
12/28/2011 21:45 EST	2.85[P]	3,700[P]
12/28/2011 22:00 EST	2.84[P]	3,740[P]
12/28/2011 22:15 EST	2.82[P]	3,800[P]
12/28/2011 22:30 EST	2.80[P]	3,840[P]
12/28/2011 22:45 EST	2.77[P]	3,890[P]
12/28/2011 23:00 EST	2.77[P]	3,920[P]
12/28/2011 23:15 EST	2.75[P]	3,940[P]

12/28/2011 23:30 EST	2.72[P]	3,980[P]
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12/29/2011 00:15 EST	2.65[P]	3,970[P]
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12/29/2011 00:45 EST	2.59[P]	4,020[P]
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12/29/2011 01:45 EST	2.55[P]	4,060[P]
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12/29/2011 02:45 EST	2.59[P]	4,020[P]
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12/29/2011 04:45 EST	2.90[P]	3,760[P]
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12/31/2011 15:45 EST	2.59[P]	4,590[P]

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12/31/2011 23:00 EST	3.22[P]	4,410[P]
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12/31/2011 23:45 EST	3.14[P]	4,850[P]
01/01/2012 00:00 EST	3.12[P]	4,800[P]
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01/01/2012 00:30 EST	3.06[P]	5,000[P]
01/01/2012 00:45 EST	3.04[P]	5,040[P]
01/01/2012 01:00 EST	3.01[P]	5,000[P]
01/01/2012 01:15 EST	2.98[P]	5,080[P]
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01/01/2012 02:00 EST	2.89[P]	5,050[P]
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01/01/2012 04:15 EST	2.64[P]	4,790[P]
01/01/2012 04:30 EST	2.63[P]	4,720[P]
01/01/2012 04:45 EST	2.61[P]	4,680[P]
01/01/2012 05:00 EST	2.59[P]	4,660[P]
01/01/2012 05:15 EST	2.60[P]	4,600[P]
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01/21/2012 14:30 EST	2.77[P]	4,630[P]
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01/24/2012 23:00 EST	2.79[P]	4,910[P]
01/24/2012 23:15 EST	2.77[P]	4,870[P]
01/24/2012 23:30 EST	2.73[P]	4,850[P]
01/24/2012 23:45 EST	2.71[P]	4,840[P]
01/25/2012 00:00 EST	2.68[P]	4,790[P]
01/25/2012 00:15 EST	2.65[P]	4,760[P]
01/25/2012 00:30 EST	2.63[P]	4,740[P]
01/25/2012 00:45 EST	2.61[P]	4,670[P]
01/25/2012 01:00 EST	2.60[P]	4,670[P]
01/25/2012 01:15 EST	2.59[P]	4,630[P]
01/25/2012 01:30 EST	2.63[P]	4,510[P]
01/25/2012 01:45 EST	2.66[P]	4,500[P]
01/25/2012 02:00 EST	2.70[P]	4,430[P]
01/25/2012 02:15 EST	2.74[P]	4,400[P]
01/25/2012 02:30 EST	2.78[P]	4,340[P]
01/25/2012 02:45 EST	2.83[P]	4,260[P]
01/25/2012 03:00 EST	2.88[P]	4,160[P]
01/25/2012 03:15 EST	2.94[P]	4,080[P]
01/25/2012 03:30 EST	3.01[P]	4,010[P]
01/25/2012 03:45 EST	3.08[P]	3,990[P]
01/25/2012 04:00 EST	3.16[P]	3,940[P]
01/25/2012 04:15 EST	3.23[P]	3,860[P]
01/25/2012 04:30 EST	3.30[P]	3,810[P]
01/25/2012 04:45 EST	3.37[P]	3,750[P]
01/25/2012 05:00 EST	3.44[P]	3,700[P]
01/25/2012 05:15 EST	3.49[P]	3,690[P]
01/25/2012 05:30 EST	3.54[P]	3,690[P]
01/25/2012 05:45 EST	3.57[P]	3,710[P]
01/25/2012 06:00 EST	3.58[P]	3,730[P]
01/25/2012 06:15 EST	3.58[P]	3,790[P]
01/25/2012 06:30 EST	3.56[P]	[P]

Attachment B

E-Mail from Doug Leeper to Martyn Johnson, Dated February 7, 2012

From: Doug Leeper
To: Martyn Johnson (martynellijay@hotmail.com)
Bcc: Cara S. Martin; Chris Zajac; Christopher Pettit; Darcy A. Brune; Dave Dewitt; Doug Leeper; Gary E. Williams; Jay Yingling; Karen West; Kenneth R. Herd; Laura Donaldson; Lou Kavouras; Mark Barcelo; Mark Hammond; Michael Molligan; Mike Heyl; Paul Williams; Robyn O. Felix; Ron Basso; Sid Flannery; Tammy Hinkle; Veronica Craw; Xinjian Chen; Yassert Gonzalez
Subject: E-Mail on Homosassa Specific Conductance
Date: Tuesday, February 07, 2012 1:36:12 PM
Attachments: E-Mail from MJohnson - Specific Conductance Homosassa Main Spring 28jan2012.pdf

Martyn:
I'm writing to acknowledge that the District received your e-mail concerning specific conductance measurement in the Homosassa River system that was sent to R. Rodriguez and me on January 28, 2012.

As always, I thank you for your input and note that your comments and all other public input on the minimum flows and levels development process will be reviewed by staff and made available for consideration by the Governing Board and other persons interested in the Homosassa River system.

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

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Electronic mail correspondence concerning water quality issues in the Homosassa River

---

This memorandum documents correspondence concerning water quality issues in the Homosassa River system. The initial correspondence was between Andy and Terry Anuner and Charles Morton.

DAL
Attachments

From:	Veronica Craw
To:	Mark Hammond; Doug Leeper; Mike Heyl
Cc:	Kenneth R. Herd; Eric DeHaven
Subject:	FW: Update on River Improvements
Date:	Friday, December 30, 2011 9:27:07 AM

FYI…this is coming through the Task Force channels.

Veronica Craw
Southwest Florida Water Management District
veronica.craw@swfwmd.state.fl.us

From: Charles W Morton [mailto:swampdad@juno.com]
Sent: Thursday, December 29, 2011 5:11 PM
To: Mark Rials
Subject: Fw: Update on River Improvements

Mark,

I don't know if the Citrus task force has anything on Chassahowitzka on their horizon. You might pass this to them.

The springs are mostly in Citrus co.

Chuck Morton

----- Forwarded Message -----
From: "Andy & Terri Auner" <bludog@tampabay.rr.com>
To: "'Charles W Morton'" <swampdad@juno.com>
Date: Thu, 29 Dec 2011 16:48:21 -0500
Subject: Update on River Improvements
Message-ID: <00c501ccc673$954aaea0$bfe00be0$@rr.com>

Hello Chuck,

I will be brief, but I wanted you to know we have a phone conference with Mr. Greg Munson, Dep. Sec. of DEP in Tallahassee next Tuesday.
The Homosassa River Alliance, The Chassahowitzka River Restoration, and the WAR = Withlacoochee Area Residents are represented.

While I am working closely with the Homosassa group, I would also like to also represent the Weeki Wachee River.
The conversation will be basically a discussion about the proposed MFLs. (Minimum Flow Levels)

We are asking DEP to direct SWFWMD to disregard the proposals as they are, and either use better, more recent data, or set the levels at zero.
This is for rivers from Withlacoochee down to Weeki Wachee. We also want a restoration plan put in place for each river.

We are asking a lot, but these rivers are in trouble.

So, if it is OK, I will bring up the Weeki Wachee's trouble with the sand, etc. and keep you updated?

Thanks, Terri Auner

53 Year Old Mom Looks 33
The Stunning Results of Her Wrinkle Trick Has Botox Doctors Worried
consumerproducts.com

From:	Mark Hammond
To:	Veronica Craw; Doug Leeper; Mike Heyl
Cc:	Kenneth R. Herd; Eric DeHaven
Subject:	RE: Update on River Improvements
Date:	Friday, December 30, 2011 11:44:14 AM

I will be in on the conference call with FDEP…thanks.

From: Veronica Craw
Sent: Friday, December 30, 2011 9:27 AM
To: Mark Hammond; Doug Leeper; Mike Heyl
Cc: Kenneth R. Herd; Eric DeHaven
Subject: FW: Update on River Improvements

FYI…this is coming through the Task Force channels.

Veronica Craw
Southwest Florida Water Management District
veronica.craw@swfwmd.state.fl.us

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Thanks, Terri Auner

53 Year Old Mom Looks 33
The Stunning Results of Her Wrinkle Trick Has Botox Doctors Worried
consumerproducts.com

From:	Mark Hammond
To:	Veronica Craw
Cc:	Eric DeHaven; David Rathke; Kenneth R. Herd; Doug Leeper
Subject:	FW: Thanks
Date:	Tuesday, January 03, 2012 5:42:37 PM

Veronica,
Sounds like there are several "hot" spots on the river that some of the residents are concerned with as "dead" areas of the river…the result of fish operations for decades…one area is where Otter Creek joins the river. FDEP is to review the existing data, set up a meeting to visit the river (with the residents), take some sediment collections to analyze, and determine if some type of restoration activity would be appropriate…our role is to attend site visit and assist FDEP.
Copying Doug so he is aware.
Thanks.
Mark

From: Mark Hammond
Sent: Tuesday, January 03, 2012 5:38 PM
To: 'Munson, Greg'
Cc: Nevin, Kara; Gibbs, Ana; Joyner, Daryll; Owen, Richard; Espy, Julie; Yerian, Art; Veronica Craw; Eric DeHaven; David Rathke; Cara S. Martin
Subject: RE: Thanks

Greg,
I will ask Veronica Craw to be the SWFWMD point of contact for this.
Thanks.
Mark

Mark A. Hammond, P.E.
Director, Resource Management Division
Southwest Florida Water Management District
352-796-7211, ext 4620

From: Munson, Greg [mailto:Greg.Munson@dep.state.fl.us]
Sent: Tuesday, January 03, 2012 5:27 PM
To: Gibbs, Ana; Joyner, Daryll; Espy, Julie; Owen, Richard; Yerian, Art; Mark Hammond
Cc: Nevin, Kara
Subject: Thanks

Thanks for everyone's time on today's call. I appreciate everyone's willingness to help me address this issue that came to me through some constituent mail.

I think the issues changed considerably given recent progress and after Terri had a chance to consult with some other folks on the River Alliance, so we are now looking at longer term restoration issues rather than compliance and enforcement issues as initially seemed likely. My

hope is to find some existing mechanism that is an appropriate response for their concerns, so that if this portion of the river is in fact impaired for fecal coliform we can include it in the next round of impaired waters for the region. I think a visit and a review of the existing lab results can at least furnish a basis for deciding whether we need to look at further testing in the region.

Consequently, I will share the lab results I receive from the Auner's and then, after we've had a look, act to coordinate a meeting at the river.

Ana, I am assuming that you will continue to be involved from the SWD office, but let me know please if it will be someone else.

Mark, please let me know who you'd like to be involved from SWFWMD and we will keep them involved as appropriate.

Other than the one point of contact from the SWD office and SWFWMD above I don't see the need to keep the rest of this group involved (but let me know if you'd like to stay involved). In conjunction with the SWD office, I'm glad to act as a conduit on water quality issues for Daryll and Julie.

Daryll, I'll give you a call to see where/if you can go look at the sediment prior to a meeting at the river.

Thanks again all.

GREG MUNSON
DEPUTY SECRETARY
WATER POLICY & ECOSYSTEM RESTORATION
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
3900 COMMONWEALTH BLVD., MS 23
TALLAHASSEE, FLORIDA 32399-3000
☎TEL: 850-245-2029 | FAX: 850-245-2147

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 this link to the DEP Customer Survey. Thank you in advance for completing the survey.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Comments from Martyn Johnson regarding minimum flows development for the Chassahowitzka and Homosassa River systems

---

This memorandum documents a February 8, 20120 e-mail from Martyn Johnson that addresses points associated with minimum flows development for the Chassahowitzka and Homosassa River systems.

DAL
Attachment

From:	Alan Martyn Johnson
To:	Doug Leeper; Mike Heyl
Subject:	Homosassa Chassahowitzka MFL"s you Feb 6, 2012 e-mails
Date:	Wednesday, February 08, 2012 8:08:20 AM

Doug and Mike,
Thank you both for taking the time yesterday to respond to my e-mails of January 6 and 19.

To be fair I probably should take some time to digest, but there are some fundamental points that cross my mind immediately.

1. To determine Significant Harm do we not need a baseline?

   I thought the basis of setting minimum flows was to identify what reduction in inflow spring water would result in the river system deteriorating to a point that significant harm (change) has occurred. By some convention it has been accepted this is, condition X deteriorates to X – 15%. The condition X using a logical approach needs to be set; it can not be a variable. Considering, salinity, the volumes of various ranges of salinity in the river system are set at some point in time. I thought that is what all those studies were for; to determine the salinity profile (at that time). Then by determining, to the best scientific ability, what flow reduction of 'good quality' spring water inflow would result in the profile deteriorating by 15% volume, area or other appropriate measure. If the inflow reduces below that point I do not think Mother Nature has a control line in her program that says spring water inflow has dropped so invoke seawater inflow control. Seawater inflow will replace the loss of spring water inflow in both the Homosassa and Chassahowitzka.
   There has to be a baseline. Some would argue the baseline was when "Outstanding Florida Water" was pronounced.

2. I have looked at the Rule 40D-8.041 for Weeki Wachee and it (at least the version I looked at and commented on in a recent e-mail) references flows to a specific gage site, not the Northern District Model. Just quickly looked at Hillsborough, it references Morris Bridge gage and appears to be a strongly tidally influenced site…but that was a quick look.
   So this latest concept/wording, using NDM, looks like an attempt to avoid the baseline concept because there is already knocking at that door.

3. Think you have clarified that 'natural flow' is; pumpage plus the flow/discharge from the spring as measured by USGS. This 'natural flow' can be related to the 'baseline' in 1 above. In both the Homosassa and Chassahowitzka pumpage/groundwater withdrawals/human impact were considered as insignificant in assessing the MFL in the draft reports.
   I am pleased that it has been seen fit to focus more on how much is being sucked out of the aquifer. This will help us realize it is a significant factor. But, I am curious how pumpage will be used to assess each of the rivers individually. How is pumpage (will have to add that word to my dictionary) in one basin related to pumpage in an adjacent basin. Will pumpage be combined between basins? That can of worms needs opening, can't have it both ways. The level in Weeki Wachee Well is used as the major predictor of calculated discharge into each of the rivers in the area. Groundwater withdrawals for WWachee (about 10% of discharge, as I recall, based on 2006 data in the 2008 report) surely influenced WW Well levels and consequentially Homosassa

and Chass discharge. It was the flow into these rivers at the time the studies were done that created the conditions found during the studies. And the inflow reductions MFL's, for 15% deterioration to cause significant harm, were based on those inflows.

4. Groundwater withdrawals can not be changed with change of rainfall.
   The continued increase in groundwater withdrawals needs to be a focus now. It is political thin ice to revoke water use permits. Yes, I know they have to be renewed every five or ten years, but the politics of not renewing are enormous. The politics of water savings/use reduction plans are fragile and these are often voluntary programs to avoid the politics of enforcement. If I recall correctly in one of the draft reports it mentioned that MFL's are as much political as scientific (my words from memory). How true that is, and the legal jargon plays well with that tune.

5. Given the method of assessment you suggest, use of the Northern District Model; is it not already used to 'model' the future? It has been quoted as predicting flows for future scenarios, those pumping versus no pumping discharge changes. Does it not already include rainfall modeling? No doubt it can be refined by adding actual data each year, but is it not a predictive tool rather than a record book?
   Just worries me the assumptions the NDM uses. A number of times I have questioned the assumptions. The one that comes to mind immediately is, Table 2-4 (if memory serves) in the Homosassa draft report, where the various springs SEFork all have the same discharge, but not supported by a shred of empirical data.

Just some initial comments, I will take the time to digest your responses further.

While I am on the issue of model validity, I will try to pull together my notes/comments about the Chassahowitzka hydrodynamic model that I have recently been looking at.

And, from a tax payer concerned about the future of these and other rivers, SWFWMD and DEP need to start working together on the basis that;

Prevention Is Better Than Cure.

I appreciate that the science of understanding these rivers and spring flows is complex, breakpoints thresholds guaranteed numbers are not Mother Natures forte, and that your task is a difficult one. Hope my outside critic helps you focus and is not a distraction from your efforts to protect Florida's Outstanding Waters while trying to meet the water requirements of the population and industry.

Martyn

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning stream flow measurement on the Springs Coast

---

This memorandum documents an e-mail from Martyn Johnson that addresses stream flow measurement at sites on the Springs Coast.

DAL
Attachment

From:	Alan Martyn Johnson
To:	Al Grubman; Ron Miller; Norman Hopkins; Brent Whitley; Dan Hillard; Dana Bryan; Doug Leeper; Mike Heyl; Kevin J Grimsley; R Rodriguez
Subject:	Follow up FOIA Equations response
Date:	Thursday, February 16, 2012 8:26:14 AM
Attachments:	Chassahowitzka River Gage 02310663 Verification FOIA Equation.xls

Following up on yesterdays e-mail regarding the equations. Brad made a good point about not looking at data after the date of his request in case there is a change. To that end I have added the data (blue) from October 18, 2011 on the spreadsheet I shared yesterday. I did download the whole 120 days data, but thought that was a little much to share yesterday to make the point.

For Chassahowitzka main spring I had plugged the equation into August 25, 2011 which is what resulted in the original question. The equation matches the calculated discharge on USGS web site.

As promised I have looked at Bagley Cove Crystal River. Even looking at the equation yesterday I had concerns, sure enough it does not match. I even tried using the stream level instead of gage height. The stage area may well be the 1895.9 sq.ft. and the 527.2ft. may be the channel width, but with gage heights typically around 12 ft something is not right in this equation.

Yesterday one of my readers asked if I was now agreeing that the discharge data is correct.

Let me be clear in case my wording yesterday was not. The equations for the three Homosassa sites and Chassahowitzka main spring are the equations USGS uses to calculate the discharge. That does not mean these calculated discharges are TRUE.

Let me first take the SE Fork; the calculated discharge when considered over a tidal cycle indicates much larger changes of level in the roughly 3 acre pool upstream of the gage site than actually occur. My speculation is that the discharge as cfs is much more consistent than the calculated discharge data implies. To support this speculation, I have measured stream velocities many times, using oranges passing under the Fishbowl Bridge . The whole purpose of the velocity meter at this location is to better understand this. I have recently had conversations with manufacturers of acoustic velocity meters in order to better understand why after over 5 months we still await even preliminary data.

Homosassa River Macrae's; I still have major concerns that the squaring of negative velocity reading (0.121382*Ivel*Ivel) in the equation results in a bias in the calculation of inflow versus outflow.

Homosassa Main Springs; in my opinion this is closest to the truth, , but there are still occasions when the field measurements differ by more than 10%.

Chassahowitzka main spring; I have some concern that the large multiplier applied to the stage change, the 905.3087, the factor resulting in negative flow is rather high. Brad Rimbey and myself have been trying to determine the open water area upstream of the gage site to do a similar calculation to what I did for SE Fork. The canals are reasonably easy to estimate, the problem is trying to get a number for the area 'upstream' of Bubba/Seven Sisters Springs. I intend in the next few weeks to get a better handle on whether or not there are any upstream

flows i.e. past Bubba Spring.

Let me be clear, none of this is easy simple science. USGS and SWFWMD are trying to understand these springs, but sometimes it is necessary to step back from the computers, regression analyses and models and ask the folks what they see. Those folks that have seen the Homosassa and Chassahowitzka Rivers deteriorate, they are the test of whether or not the computer simulation is meaningful. My timing of floating oranges may not be as accurate as an acoustic velocity meter, if it is located correctly and the equations used to translate what it sees as stream velocity to cfs are correct, but the oranges have no way to go other than with the flow!!.

Have a great day.

Martyn.

Date / Time	Gage height, feet,	Stream veloc-ity, ft/s, VELOCITY SENSOR	Dis-charge, ft3/s, not filtrd. for tide	Cross Section
02/07/2012 00:00 EST	1.06	-0.47	-847	1785.014
02/07/2012 00:15 EST	1.19	-0.49	-899	1829.672
02/07/2012 00:30 EST	1.32	-0.42	-798	1874.537
02/07/2012 00:45 EST	1.43	-0.48	-925	1912.661
02/07/2012 01:00 EST	1.53	-0.49	-958	1947.448
02/07/2012 01:15 EST	1.63	-0.58	-1,150	1982.358
02/07/2012 01:30 EST	1.72	-0.6	-1,220	2013.881
02/07/2012 01:45 EST	1.8	-0.59	-1,220	2041.985
02/07/2012 02:00 EST	1.88	-0.5	-1,050	2070.167
02/07/2012 02:15 EST	1.94	-0.5	-1,060	2091.355
02/07/2012 02:30 EST	1.97	-0.43	-913	2101.966
02/07/2012 02:45 EST	1.98	-0.32	-673	2105.505
02/07/2012 03:00 EST	1.96	-0.2	-429	2098.428
02/07/2012 03:15 EST	1.92	-0.03	-66	2084.288
02/07/2012 03:30 EST	1.87	0.16	325	2066.64
02/07/2012 03:45 EST	1.82	0.22	457	2049.023
02/07/2012 04:00 EST	1.78	0.26	537	2034.952
02/07/2012 04:15 EST	1.72	0.26	532	2013.881
02/07/2012 04:30 EST	1.67	0.25	494	1996.356
02/07/2012 04:45 EST	1.61	0.22	440	1975.366
02/07/2012 05:00 EST	1.55	0.25	484	1954.42
02/08/2012 00:15 EST	0.46	-0.39	-617	1581.58
02/08/2012 00:30 EST	0.62	-0.45	-733	1635.398
02/08/2012 00:45 EST	0.79	-0.59	-995	1692.923
02/08/2012 01:00 EST	0.96	-0.56	-988	1750.802
02/08/2012 01:15 EST	1.13	-0.63	-1,140	1809.035
02/08/2012 01:30 EST	1.27	-0.58	-1,080	1857.257
02/08/2012 01:45 EST	1.4	-0.56	-1,080	1902.249
02/08/2012 02:00 EST	1.51	-0.52	-1,020	1940.481
02/08/2012 02:15 EST	1.6	-0.54	-1,070	1971.872
02/08/2012 02:30 EST	1.69	-0.53	-1,070	2003.362
02/08/2012 02:45 EST	1.77	-0.47	-966	2031.437
02/08/2012 03:00 EST	1.83	-0.46	-942	2052.544
02/08/2012 03:15 EST	1.86	-0.37	-778	2063.114
02/08/2012 03:30 EST	1.87	-0.27	-558	2066.64
02/08/2012 03:45 EST	1.86	-0.17	-354	2063.114
02/08/2012 04:00 EST	1.82	0.01	19	2049.023
02/08/2012 04:15 EST	1.77	0.2	403	2031.437
02/08/2012 04:30 EST	1.72	0.22	449	2013.881
02/08/2012 04:45 EST	1.66	0.27	543	1992.855

02/08/2012 05:00 EST	1.61	0.25	489	1975.366

02/14/2012 00:00 EST	0.14	0.34	504	1474.885
02/14/2012 00:15 EST	0.06	0.34	494	1448.407
02/14/2012 00:30 EST	-0.02	0.34	473	1422.007
02/14/2012 00:45 EST	-0.09	0.34	465	1398.972
02/14/2012 01:00 EST	-0.17	0.33	444	1372.719
02/14/2012 01:15 EST	-0.24	0.34	447	1349.813
02/14/2012 01:30 EST	-0.31	0.34	439	1326.966
02/14/2012 01:45 EST	-0.38	0.35	452	1304.179
02/14/2012 02:00 EST	-0.45	0.33	412	1281.452
02/14/2012 02:15 EST	-0.51	0.33	405	1262.02
02/14/2012 02:30 EST	-0.57	0.32	389	1242.632
02/14/2012 02:45 EST	-0.63	0.32	382	1223.287
02/14/2012 03:00 EST	-0.68	0.33	386	1207.201
02/14/2012 03:15 EST	-0.73	0.27	314	1191.145
02/14/2012 03:30 EST	-0.77	0.26	301	1178.322
02/14/2012 03:45 EST	-0.79	0.18	206	1171.918
02/14/2012 04:00 EST	-0.77	0.07	86	1178.322
02/14/2012 04:15 EST	-0.72	-0.06	-65	1194.354
02/14/2012 04:30 EST	-0.63	-0.13	-155	1223.287
02/14/2012 04:45 EST	-0.54	-0.15	-179	1252.32
02/14/2012 05:00 EST	-0.46	-0.14	-173	1278.21

Date / Time	Gage height, feet,	Stream velocity, ft/s, VELOCITY SENSOR	Discharge, ft3/s, not filtrd. for tide	
10/18/2011 00:00 EST	1.19	-0.11	-208	1829.672
10/18/2011 00:15 EST	1.24	-0.19	-347	1846.903
10/18/2011 00:30 EST	1.29	-0.24	-442	1864.165
10/18/2011 00:45 EST	1.35	-0.26	-493	1884.92
10/18/2011 01:00 EST	1.4	-0.24	-451	1902.249
10/18/2011 01:15 EST	1.46	-0.24	-456	1923.084
10/18/2011 01:30 EST	1.51	-0.23	-444	1940.481
10/18/2011 01:45 EST	1.57	-0.23	-449	1961.397
10/18/2011 02:00 EST	1.62	-0.28	-567	1978.861
10/18/2011 02:15 EST	1.68	-0.34	-688	1999.858
10/18/2011 02:30 EST	1.74	-0.36	-728	2020.9
10/18/2011 02:45 EST	1.81	-0.4	-821	2045.503
10/18/2011 03:00 EST	1.88	-0.45	-933	2070.167
10/18/2011 03:15 EST	1.95	-0.5	-1,070	2094.891
10/18/2011 03:30 EST	2.02	-0.56	-1,200	2119.675
10/18/2011 03:45 EST	2.1	-0.61	-1,320	2148.073

10/18/2011 04:00 EST	2.17	-0.66	-1,440	2172.985
10/18/2011 04:15 EST	2.25	-0.76	-1,680	2201.53
10/18/2011 04:30 EST	2.33	-0.71	-1,590	2230.153
10/18/2011 04:45 EST	2.4	-0.74	-1,680	2255.262
10/18/2011 05:00 EST	2.48	-0.79	-1,820	2284.032
10/18/2011 05:15 EST	2.54	-0.85	-1,990	2305.661
10/18/2011 05:30 EST	2.6	-0.86	-2,020	2327.334
10/18/2011 05:45 EST	2.65	-0.82	-1,940	2345.429
10/18/2011 06:00 EST	2.68	-0.76	-1,820	2356.3
10/18/2011 06:15 EST	2.69	-0.63	-1,510	2359.926
10/18/2011 06:30 EST	2.7	-0.53	-1,260	2363.554
10/18/2011 06:45 EST	2.68	-0.33	-790	2356.3
10/18/2011 07:00 EST	2.66	-0.16	-383	2349.051
10/18/2011 07:15 EST	2.62	-0.18	-419	2334.568
10/18/2011 07:30 EST	2.57	0.12	288	2316.492
10/18/2011 07:45 EST	2.53	0.3	702	2302.053

Velocity Index	FOIA Equation cfs	Difference
-0.37405	-668	-179
-0.39035	-714	-185
-0.3333	-625	-173
-0.3822	-731	-194
-0.39035	-760	-198
-0.4637	-919	-231
-0.48	-967	-253
-0.47185	-964	-256
-0.3985	-825	-225
-0.3985	-833	-227
-0.34145	-718	-195
-0.2518	-530	-143
-0.154	-323	-106
-0.01545	-32	-34
0.1394	288	37
0.1883	386	71
0.2209	450	87
0.2209	445	87
0.21275	425	69
0.1883	372	68
0.21275	416	68
-0.30885	-488	-129
-0.35775	-585	-148
-0.47185	-799	-196
-0.4474	-783	-205
-0.50445	-913	-227
-0.4637	-861	-219
-0.4474	-851	-229
-0.4148	-805	-215
-0.4311	-850	-220
-0.42295	-847	-223
-0.37405	-760	-206
-0.3659	-751	-191
-0.29255	-604	-174
-0.21105	-436	-122
-0.12955	-267	-87
0.01715	35	-16
0.172	349	54
0.1883	379	70
0.22905	456	87

0.21275	420	69
0.2861	422	82
0.2861	414	80
0.2861	407	66
0.2861	400	65
0.27795	382	62
0.2861	386	61
0.2861	380	59
0.29425	384	68
0.27795	356	56
0.27795	351	54
0.2698	335	54
0.2698	330	52
0.27795	336	50
0.22905	273	41
0.2209	260	41
0.1557	182	24
0.06605	78	8
-0.0399	-48	-17
-0.09695	-119	-36
-0.11325	-142	-37
-0.1051	-134	-39
-0.08065	-148	-60
-0.14585	-269	-78
-0.1866	-348	-94
-0.2029	-382	-111
-0.1866	-355	-96
-0.1866	-359	-97
-0.17845	-346	-98
-0.17845	-350	-99
-0.2192	-434	-133
-0.2681	-536	-152
-0.2844	-575	-153
-0.317	-648	-173
-0.35775	-741	-192
-0.3985	-835	-235
-0.4474	-948	-252
-0.48815	-1049	-271

-0.5289	-1149	-291
-0.6104	-1344	-336
-0.56965	-1270	-320
-0.5941	-1340	-340
-0.63485	-1450	-370
-0.68375	-1576	-414
-0.6919	-1610	-410
-0.6593	-1546	-394
-0.6104	-1438	-382
-0.50445	-1190	-320
-0.42295	-1000	-260
-0.25995	-613	-177
-0.1214	-285	-98
-0.1377	-321	-98
0.1068	247	41
0.2535	584	118

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Article in the Sarasota Herald Tribune on manatees and warm water habitat in Florida

---

This memorandum documents an article written by Kate Spinner on warm water refuges for manatees and minimum flows development . The article was published on February 24, 2012.

DAL
Attachment

Herald-Tribune

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Saving manatees from the cold, naturally

By Kate Spinner
Published: Friday, February 24, 2012 at 4:27 p.m.

Before settlers ditched and drained Florida, more water bubbled up from beneath the ground to feed rivers and streams or seeped slowly into creeks from soggy wetlands. Warmed by the Earth, that water kept manatees alive during the chilliest days of winter.

But Florida's development upended that natural system. Now the endangered manatees, aquatic cousins to the elephant, rely largely on people's demand for electricity to get them through the winter.

Power plants provide the only source of warmth in many of the state's diminished waterways, attracting manatees by the hundreds during cold snaps. Yet state wildlife regulators say power plants are not manatees' best insurance plan, because they can fail suddenly, may close temporarily or have to be remodeled.

Hundreds of manatees died during the last two years — two of the coldest winters on record — but even more would have perished if even one power plant failed. The need is so critical that Florida Power & Light is spending $250,000 a year to keep water warm for manatees at its Cape Canaveral plant while a new operation is being built there.

Thinking long-term, the Florida Fish and Wildlife Conservation Commission is looking to the state's remaining natural areas — including one in North Port — to provide permanent manatee protection during cold days.

Successfully preserving natural warm areas hinges on limiting the amount of water people take from the spring-fed rivers for drinking water, agriculture, recreation and other uses.

But a separate agency, the Southwest Florida Water Management District, determines how much water can be taken from rivers and streams, through regulations called minimum flows.

Flows in almost every spring in the state are declining, but not quite enough to significantly put manatees in danger now, said Ron Mezich, a biological scientist with the FWC. The pressure on those resources is increasing, however.

"We're in pretty good shape. That's why we're pushing for these minimum flows to get set now rather than later so we don't lose more flow than necessary," Mezich said.

Need for warmth

Manatees require warm water to survive the winter. When water temperatures fall below 68 degrees, the large animals swim inland, finding refuge in spring-fed creeks and rivers where water temperatures are higher.

This year's mild weather made the winter easy for the big mammals. Only nine so far this year have been found dead from cold stress, even after a few days of near freezing weather.

The story was different in 2010 and 2011, when prolonged freezes took an enormous toll. Wildlife rescuers found about 400 dead manatees, with the likelihood that many more died out of sight.

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Those large numbers, for a population of animals estimated at about 5,000, raised questions among FWC staff and manatee advocates about whether there are enough natural warm sites for manatees to gather.

Although hundreds of manatees congregate at power plants to shelter from the cold, a failure of the plant or a reduction in its heat generation could lead to a deadly situation. Manatees also tend to survive better at natural sites, manatee advocates say.

"Certainly manatees are most protected at natural warm water sites and we've seen that in the last few winters," said Katie Tripp, director of science and conservation with Save the Manatee Club. "The cold stress in and around the springs has been lower than it has been around power plant waters because it's natural."

Managing flow

Once the water district sets a minimum flow, it puts a limit on how much water developers, farmers or other industries can take from the river or its surrounding aquifers.

In the Homosassa, Chassahowitzka and Crystal rivers north of Tampa, springs keep 72-degree water constantly flowing. During cold days, hundreds of manatees pack into those rivers, making them among the most important refuges in the state.

To protect them, the water district was originally supposed to set minimum flows for the Crystal River in 2010 and the other two rivers in 2011.

"We're a little bit delayed relative to our original schedule," said Doug Leeper, the water district's chief environmental scientist. He blamed the delay on the complexity of the river systems and the large number of "stakeholders."

Among the most contentious is the Chassahowitzka. The district proposed that the river could handle an 11 percent reduction in flow without significantly harming wildlife, including manatees. Residents protested, appalled at any flow reduction.

The district is not allowed to set a minimum flow that would cause significant harm, a subjective threshold.

Leeper said the district is in talks with residents but any proposed minimum flow has to be approved by the governor-appointed board that manages the water district. Pressure comes from both sides: residents and those who may want to tap the river's water in the future.

"Those pressures don't necessarily influence the scientific basis for minimum flows, but they can come into play when political bodies, such as the governing board, decides not to implement minimum flows," Leeper said.

On the northeast coast of Florida, where Blue Spring also draws hundreds of manatees, pressure from water suppliers near Orlando is threatening flow rules already in place.

"There's some push back to allow more pumping of groundwater in that area," Mezich said.

Flow protections for Blue Spring, set in 2008, came after a lengthy battle, Tripp said. The rules require flows to increase so that the spring can host more manatees in the future.

Improving access

Maintaining water flow is one part of the equation in protecting wintering manatees. Another is improving access to warm water.

Of the 22 small and large natural springs across the state, more than half have barriers that impede manatees, according to a 2006 assessment by the federal Marine Mammal Commission.

North Port's Warm Mineral Spring is one. Known as a refuge for tourists seeking a soothing dip in Florida's only true warm spring, it also could host manatees if they could get there.

The spring seeps into Salt Creek, a shallow and narrow tributary that runs straight through a neighborhood before it empties into the Myakka River.

There are weirs and low tides to navigate, limiting the number of manatees the creek can hold. Still more than 70 manatees at a time have packed the creek during cold weather.

The FWC is researching ways to make the creek more accessible, possibly by dredging parts of it, if water flows from the spring are sufficient.

Salt Creek and Warm Mineral Spring does not attract as many manatees as other refuges, but it is a critical site because it is the only natural warm water area in Southwest Florida.

"It's important," Mezich said. "In the long term it's very important."

May 16, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence from Martyn Johnson to Kevin Grimsley concerning specific conductance at Homosassa and Chassahowitzka Springs

---

This memorandum documents an e-mail from Martyn Johnson to Kevin Grimsley, with the United States Geological Survey, that addresses specific conductance at the Homosassa and Chassahowitzka river systems.

DAL
Attachment

From:	Alan Martyn Johnson
To:	Kevin J Grimsley
Cc:	Brad Rimbey; Doug Leeper; Ron Miller; Al Grubman; Mike Heyl
Subject:	RE: Freedom of Information Act Public Records Request
Date:	Tuesday, March 20, 2012 8:03:28 AM

Kevin,
Sorry for the slow response, we stayed in Homosassa longer than planned and did not visit the library (for internet) more than absolutely essential.

Regarding the velocity meter readings and the mean channel velocity, it will take me a lot of thought/follow up to understand how one velocity meter shows 20% more than the mean velocity and at another location shows 20% less. Must be like real estate....location, location, location.

I am pleased that we now agree the data from the Gage Site at the Homosassa Springs does accurately represent the Specific Conductance of water discharging from the spring. I have looked at the data over the time period it has been collected, I will share the details as I get time, but the analysis I did shows a continuing increase in what must primarily be seawater ingress into the spring (both the higher and lower specific conductance in the cycle). I had pointed out the increase in the lower results (daily lows) when I first commented on this to Doug. Some of the recent highs are very troubling...SWFWMD job to analyze the data.

At our meeting following one of the workshops my summary included the following:

I tried hard to comprehend the logic of the lag explanation for this cyclic specific conductance (although not discussed as such I assume the measurements done across the channel have resulted in discounting the stratification thought). I would certainly be interest if you can share the results of the cross channel measurements that Kevin mentioned.

The response was:

I need to ask again that you send any data requests (such as #3 below) through our official request website at http://waterdata.usgs.gov/fl/nwis/feedback/?to=Florida Water Data Inquiries. Thanks.

Hence my interest in doing the testing. But, it is good that we have a common understanding at the end of the process. Hopefully we will get to that point with the discharge data at some time. I did time a few oranges passing under Fishbowl Bridge and still find the calculated discharge data to be questionable; as you must also be following USGS recently gathered Field Measurements. These measurements did not cover some of the more critical stage/tidal cycle times; no doubt you have others planned (agree there are only so many daylight hours in one day).

Regarding the Chassahowitzka.
I made four kayak trips to monitor specific conductance and observe flows. The times I monitored the reversal of flow at the Gage Site, the calculated results have the flow reversing from outflow to inflow about two hours before this in fact happens. See also the specific conductance data that I commented on a few weeks ago.
The higher specific conductance water is, from my measurements, primarily on the bottom and originates from water out flowing from Crab Creek (a flow that remained positive at all the stage heights (high tides) that I observed. Discharge from Bubba Spring (Chassahowitzka 1 and 2..unnamed tributary) is the first source of water filling the canal system as the stage

rises (split between upstream flow to the canal system and downstream flow past the main spring). As stage continues to increase the main spring flow 'splits' adding to the upstream into the canals. At high high stage there is reverse flow past the Gage Site, but it is slow and, from my measurements stratified (surface specific conductance significantly lower than bottom).

Details to follow.

Martyn

To: martynellijay@hotmail.com
CC: bwr.crrc@tampabay.rr.com
Subject: RE: Freedom of Information Act Public Records Request
From: kjgrims@usgs.gov
Date: Thu, 1 Mar 2012 15:25:32 -0500

The difference in multipliers is due to the site-specific relationship between where each meter is placed in the channel and how that relates to the mean velocity.

If you recall our meeting after one of the workgroup sessions, I explained that our testing had shown that there was no stratification at the Homosassa main spring as well. We confirmed that our sensors are accurately representing the conditions in the spring run. We believe the observed lag between the tidal changes in water level vs the tidal changes in conductance is due to the differences in how the tides affect the surface water in the river vs how it affects the groundwater being discharged from the spring.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

From:	Alan Martyn Johnson <martynellijay@hotmail.com>
To:	Kevin J Grimsley <kjgrims@usgs.gov>
Cc:	Brad Rimbey <bwr.crrc@tampabay.rr.com>
Date:	03/01/2012 02:37 PM
Subject:	RE: Freedom of Information Act Public Records Request

---

Kevin,
Thanks for clarifying what the stream velocity is as reported.

Given the differences in how the readings from the velocity meters (Ivel) are converted to get mean velocity (Chass is multiplied by 0.81 and Bagley by 1.21) is this because the type of

instrument used is different. Just seems like a 20% plus verses a 20% minus must have some reason.

I have been testing specific conductance for Homosassa Main Spring directly from the spring and at the gage site. As far as my testing shows the data from the gage site is representative of the water rising in the springs and is not subject to stratification, backflow or any other influence. I will share the data when I can get a direct connection to my computer.

Martyn

To: martynellijay@hotmail.com
Date: Sat, 25 Feb 2012 19:46:13 -0500
From: kjgrims@usgs.gov
Subject: Re: Freedom of Information Act Public Records Request
CC: bwr.crrc@tampabay.rr.com

Martyn,

The equations and tables provided are correct. For Bagley Cove, the parentheses shown in equation A are the correct grouping.

I believe your confusion is stemming from the velocities provided on NWISWeb. The velocities shown on the web have already been through the rating equations we've provided. All you have to do is multiply the velocity from the web by your computed area to get your discharge value.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

On Feb 25, 2012, at 12:10 PM, "Alan Martyn Johnson" <martynellijay@hotmail.com> wrote:

Kevin,
Thanks for the look up tables.
For Chassahowitzka the table provides the same result as the equation, bar the rounding differences between the tabled increments. The equation, provided to Brad, does not match the reported cfs discharge as previously presented in a spreadsheet.

For Bagley Cove, looking at data from 12/20/2011
There are two ways of interpreting the velocity from the equation in the Feb 13 letter to Brad.

A. Velocity = (1.2104 * Vel Index) + 0.1562 ,or
B. Velocity = 1.2104 * (Vel Index +0.1562)

Time	Gage Ht.	Stream Velocity	Reported Discharge cfs	From Look Up Table	From A Velocity	A cfs	From B Velocity	B cfs

00:00	13.41	0.96	5040	5270	1.318	6947	1.351	7120
06:15	11.00	0.35	1390	3970	0.580	2302	0.613	2432
10:00	12.50	-1.18	-5620	4780	-1.272	-6081	-1.239	-5923
11:15	13.01	-0.07	-3560	5060	0.072	361	0.104	527

As you can see neither A nor B match the reported cfs.
I have done all this at the library and trust I have not made any errors copy/paste.
Martyn

From: BWR.CRRC@tampabay.rr.com
To: kjgrims@usgs.gov
CC: martynellijay@hotmail.com
Subject: Re: Fw: Freedom of Information Act Public Records Request
Date: Fri, 17 Feb 2012 17:19:35 -0500

No problem Kevin. I appreciated how thorough your response was. Thanks again. Brad
----- Original Message -----
From: Kevin J Grimsley
To: Brad Rimbey@CRRC
Cc: Martyn Johnson
Sent: Friday, February 17, 2012 4:48 PM
Subject: Re: Fw: Freedom of Information Act Public Records Request

Hi Brad,

I apologize, but with all the different equations to gather I grabbed the wrong one for this station. The correct stage-area relationship is best described in a lookup table since that's what our database actually uses. Here is the lookup table for station 02310663. The velocity equation provided is correct.

<M2.gif>

Martyn had also mentioned having issues with the equation at Bagley Cove. The equation provided is correct, but it's possible to have small differences due to rounding errors from the lookup table. Here is the lookup table for the Bagley Cove gage as well.

<M3.gif>

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

From: "Brad Rimbey@CRRC" <BWR.CRRC@tampabay.rr.com>

To:	<kjgrims@usgs.gov>
Cc:	"Martyn Johnson" <martynellijay@hotmail.com>
Date:	02/15/2012 10:47 AM
Subject:	Fw: Freedom of Information Act Public Records Request

---

Hi Kevin,

Could you please check the equation for USGS 02310663? I checked Martyn's math and it looks OK. I also reminded Martyn not to use the equations outside the data set (i.e. not newer than January 19, 2012). Attached is the FOIA response I received from Ken Skipper in case you have not seen it. Please let me know if I should direct this to Ken instead of you. Thanks.

Brad

----- Original Message -----
From: Alan Martyn Johnson
To: Brad Rimbey
Cc: Al Grubman ; Ron Miller ; Norman Hopkins ; Brent Whitley ; Dan Hillard ; Dana Bryan ; Doug Leeper ; Mike Heyl ; Kevin J Grimsley ; R Rodriguez
Sent: Wednesday, February 15, 2012 7:51 AM
Subject: RE: Freedom of Information Act Public Records Request

Brad,
Thanks for sharing.

I have looked over the FOIA response and cross checked equations for the major gage sites with USGS current discharge data;

All the Homosassa equations match the ones in the MFL report appendices.

Weeki Wachee agrees with current discharge data. I note this equation has been in use since 2004. In the table I shared in an e-mail to Mike Heyl there was an indication that a different equation was used in 2002.

Chassahowitzka main spring 02310650 agrees with current discharge data. I note use of this equation started in October 2002. This indicates that data used in the Chass studies (discharge data 1997-2007) had a different basis for the first five years of data to the second five years. The significance is unclear, but looking at the Figure 2-6 in the Chass MFL draft report there is a noticeable increase. You may recall I used the Knochenmus and Yobbi equation which gave discharge about 20% lower than reported discharge when I first raised the question last year.

Chassahowitzka River 02310663. The equation provided does not match the current data. I have attached a spreadsheet that lead me to this point. Please feel free to double check it. The cross section equation appears to make logical sense with channel width of 329.75 ft and a stage area (if I got my terminology correct) at zero gage height of 1428.6 sq ft (this translates to an average depth at GH 0 of just over 4 ft.). The 6.1219*GH*GH results in a positive addition when the GH is negative, this is such a small factor it is not the reason for the difference I think I have identified between equation in the response and the current data.

I have not checked the other equations (I will check Crystal River Bagley Cove later), just focused on the main ones for now.

Martyn

From: BWR.CRRC@tampabay.rr.com
To: pastoralfarm@netsignia.net; rmille76@tampabay.rr.com; Mike.Heyl@swfwmd.state.fl.us; martynellijay@hotmail.com; mnewberger@verizon.net; Doug.Leeper@swfwmd.state.fl.us; Ron.Basso@swfwmd.state.fl.us; grubman1@gmail.com; norman@amyhrf.org; BrentWhitley@Sierra-Properties.com; Dana.Bryan@dep.state.fl.us; Rebecca.Bays@bocc.citrus.fl.us; kjgrims@usgs.gov; Cara.Martin@swfwmd.state.fl.us; 2buntings@comcast.net
Subject: Re: Freedom of Information Act Public Records Request
Date: Mon, 13 Feb 2012 21:31:05 -0500

It appears the Freedom of Information Act is still alive and well. It also appears that USGS does not change these equations very often. So long as there are no major changes in the karst geology which feeds our Springs Coast rivers, this is expected. See the attached response from USGS. Brad
----- Original Message -----
From: Brad Rimbey@CRRC
To: djnewman@usgs.gov
Cc: Dan Hilliard ; Cara S. Martin ; Kevin J Grimsley ; Rebecca.Bays@bocc.citrus.fl.us ; Dana.Bryan@dep.state.fl.us ; Brent Whitley ; Norman Hopkins ; Al Grubman ; Ron Basso ; Doug Leeper ; Mickey Newberger ; Martyn Johnson ; Mike.Heyl@swfwmd.state.fl.us
Sent: Thursday, January 19, 2012 4:35 PM
Subject: Freedom of Information Act Public Records Request

David J. Newman
USGS FOIA Officer
12201 Sunrise Valley Drive
Mail Stop 807
Reston, VA 20192

RE: Freedom of Information Act - Public Records Request

Dear Mr. Newman,

Pursuant to the Federal Freedom of Information Act and Florida Public Records Statute (Chapter 119 F.S.), please provide me with following public records or information.

1) The USGS regression equations which are currently (as of January 19, 2012) being used to predict the discharge at the following USGS stations

a) USGS 02310525 WEEKI WACHEE RIVER NEAR BROOKSVILLE FL
b) USGS 02310545 WEEKI WACHEE RIVER NR WEEKI WACHEE SPRINGS FL
c) USGS 02310650 CHASSAHOWITZKA RIVER NEAR HOMOSASSA FL
d) USGS 02310663 CHASSAHOWITZKA RIVER NEAR CHASSAHOWITZKA FL
e) USGS 02310673 CHASSAHOWITZKA R AT DOG ISL NR
f) USGS 02310674 CHASSAHOWITZKA R AT MOUTH NR CHASSAHOWITZKA FL
g) USGS 02310675 HIDDEN RIVER NEAR HOMOSASSA FL
h) USGS 02310678 HOMOSASSA SPRINGS AT HOMOSASSA SPRINGS FL
i) USGS 02310688 SE FORK HOMOSASSA SPRING AT HOMOSASSA SPRINGS FL
j) USGS 02310700 HOMOSASSA R AT HOMOSASSA FL
k) USGS 02310742 CRYSTAL RIVER AT MOUTH OF KINGS BAY FL
l) USGS 02310747 CRYSTAL RIVER AT BAGLEY COVE NEAR CRYSTAL RIVER FL

m) USGS 02310752 SALT RIVER NEAR CRYSTAL RIVER FL

2) The data range to which each of these equations is applicable (i.e. the beginning and ending date for the applicable data set from each USGS station)

3) A brief description of the variables used in each of the requested regression equations.

Please note that the Florida Public Records statute was referenced in this request because the monitoring for all of the recorded data in this request was cooperatively funded by a Florida state agency (SWFWMD).

Thank you in advance for assistance.

Brad W. Rimbey, P.E.

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2012.0.1913 / Virus Database: 2112/4795 - Release Date: 02/07/12
Internal Virus Database is out of date.[attachment "USGS FOIA Response - Regression Equations.pdf" deleted by Kevin J Grimsley/WRD/USGS/DOI]

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2012.0.1913 / Virus Database: 2112/4811 - Release Date: 02/15/12

May 16, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence from Martyn Johnson concerning specific conductance at Homosassa Springs

---

This memorandum documents an e-mail from Martyn Johnson that addresses specific conductance at Homosassa Springs and includes comments on water use permitting in the region.

DAL
Attachment

From:	Alan Martyn Johnson
To:	Doug Leeper
Cc:	Ron Miller; Al Grubman; Brad Rimbey; Brent Whitley; Norman Hopkins; rkane; Kevin J Grimsley; R Rodriguez
Subject:	Homosassa Main Springs Deterioration
Date:	Wednesday, March 21, 2012 8:41:50 AM
Attachments:	Homosassa Springs 120 days Specific Conductance.xls

Doug,
Attached is a spreadsheet and below is a table providing further information regarding the deterioration of water emanating from the Homosassa Main Spring. Before I get into the detail, a little background.

August last year I commented on the variation in specific conductance of water emanating from the Homosassa Main Spring as detected at USGS Gage Site 02310678. Further comment was made that the cyclic nature appeared to be inverse to stage. My comments were referred to USGS, Richard Kane , who commented on August 14 about lag and water going into storage.
Following my additional comments on August 15, USGS, Kevin Grimsley, suggested the variations were due to stratification.

As a side note; I would now add that my estimates of the volume in the Homosassa Main Spring were low; recent measurements on site/conversations with park personnel/my specific conductance monitoring, indicate the lag time from water discharging at the vents to arriving at the USGS gage site is over 30 minutes.

In an e-mail Jan 28 I informed that DEP had given me permission to sample water at the Ellie Schiller Homosassa Springs State Park to assess if the specific conductance data at the gage site was representative of the water emanating from the spring. From my sampling I concluded it is representative.

Kevin Grimsley has also confirmed that USGS also conclude the specific conductance data from the gage site is good.

During my sampling it was noted the specific conductance was generally higher than when I commented last August.

Attached is an Excel spreadsheet of the 120 days (Oct 29, 2011 to Feb 26, 2012) of specific conductance data. The data has been highlighted for the following ranges;
<3600 GREEN
5500 to 6000 YELLOW
>6000 PURPLE
If you view the entire 120 days on one screen (Sheet titled 120 days Sec Cond) it is visually evident that during this time period there is more time water over 6000 microsiemens is discharging from the spring and less time the water is below 3600.
Given this picture I looked at the daily data for this same time period each year since data collection started. The analysis was for the number of days each range was recorded; the data is the daily high and daily low. The results are;

Year	Days Low<3600	Days High 5500-6000	Days High >6000
2004/5	114*	0	0

2005/6	121	0	0
2006/7	117	5	3
2007/8	81	16	4
2008/9	115	7	2
2009/10	48	21	16
2010/11	55	21	5
2011/12	40	36	8

Note: As the data is presented on a 24 hour day, high or low readings occurring around midnight could be recorded in two different days. This could account for part of the trend but statistically the prominent trend can not be dismissed by this fact.
* 2004/5 7 days no data record

These results show a trend to higher specific conductance, which I can best attribute to increased seawater ingress into the more saline vents in the Homosassa Main Spring. Bare in mind water from the springs in the SE Fork combine to approx 1200 microsiemens during this same time period USGS Gage Site 02310688. The variations seen each tidal cycle at the Homosassa Main Springs must be due to; either increased flow from the more saline vents, or variations in the water emanating from these vents. You may recall that I did offer my time to monitor the water from the peristaltic sampling lines to help understand if the variation is quantity or quality related. I still favor my hypothesis that it is changes in relative volume emanating from each of the vents.

In the Excel sheet SpecC vs GH I have highlighted the high and low Gage Heights during the 120 day period and the high specific conductance. The higher specific conductance generally occurs closer to low GH rather than high GH, possibly indicating the more saline vents have less resistance to flow at lower GH.

Bottom Line; this further emphasizes the water emanating from Homosassa Main Spring is deteriorating to a point that it alone is a significant factor in the increased barnacle growth many long term residents have reported and that I as a 10 year newcomer have also witnessed.

All is not well in the Homosassa River. There needs to be a moratorium on further wells extracting water from the aquifer. Without this the river will be destroyed beyond recovery. You know what excessive pumping has lead to in the Tampa area rivers.

Martyn

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Electronic mail correspondence concerning a presentation on water quality issues in the Homosassa River

---

This memorandum documents correspondence concerning a presentation on water quality issues that was made at a meeting of the Save the Homosassas River Alliance.

DAL
Attachments

From:	Ron Miller
To:	Undisclosed Recipient
Subject:	Becky Ayech presentation on Toxic Algae
Date:	Wednesday, March 07, 2012 3:12:43 PM
Attachments:	Toxic Algea Presentation by Becky Ayech 3-15-2012.doc

Hi All,

I hope you can attend this interesting presentation by Becky Ayech on the toxic algae in our waterways.

Please Post and circulate this invitation to to all.

Thank you,
Ron Miller

The Homosassa River Alliance
Invites You to an Evening with

Becky Ayech

Consultant with the

Florida Water Coalition

THURSDAY, MARCH 15, 2012
7:00 P.M. in the FLORIDA ROOM
At the
ELLIE SCHILLER HOMOSASSA SPRINGS WILDLIFE STATE PARK

Learn the causes of toxic algae outbreaks, how it affects wildlife and recreational users and how each of us can act as individuals to support limits on the pollution and the polluters who foul Florida's vital water resources!

Free and open to the public.

Food Donations Gratefully Accepted for We Care Food Pantry

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning request to add Bluebird Springs and Hidden River Springs to the Northern District Model

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This memorandum documents a request from Ron Miller that the District consider adding Bluebird Springs and Hidden River Springs to the "SWFMWM water management model", an apparent reference to the Northern District Model.

Staff notes that proposed minimum flows for the Homosassa River system are expected to be applicable to the greater Homosassa River system, which includes Bluebird Springs and Hidden River Springs. Staff also notes that Hidden River Springs is currently included as a drain cell in the Northern District Model.

DAL
Attachment

From: Ron Miller
To: Marty Folk
Subject: Please add the Bluebird Spring And Hidden River to the SWFWMD model.
Date: Thursday, December 08, 2011 2:44:23 PM

Hi Marty,
Interesting information. Please add the Bluebird Springs and Hidden River to the SWFWMD water management model. Bluebird Springs is especially interesting since a Citrus County Park is based on these waters.
Ron

From: mailto:BWR.CRRC@tampabay.rr.com
Sent: Thursday, December 08, 2011 12:53 PM
To: Dan Hilliard ; Ron Miller
Subject: Fw: Chronicle article on impaired waters

FYI
----- Original Message -----
From: Marty Kelly
To: Espy, Julie
Cc: Brad Rimbey ; Doug Leeper ; Mike Heyl ; Ron Basso ; Dave Dewitt
Sent: Thursday, December 08, 2011 10:32 AM
Subject: RE: Chronicle article on impaired waters

Julie,
Sorry for taking so long to respond, but I have consulted with staff and here is our collective view. For minimum flows and levels purposes, we think it is appropriate to include Bluebird Springs and the springs that contribute flows to Hidden River within the greater Homosassa River system. Bluebird Springs and Hidden River are located in a United States Geological Survey surface water drainage basin that is separate from the basin that contains other components of the Homosassa River system (Direct Runoff to Gulf vs. the Homosassa River basin), but review of available springshed boundary information and several published reports suggests that it is reasonable to include them within the Homosassa River system. Springshed and spring location maps are shown in Figures 2-3 and 2-6, respectively, in the draft Homosassa River minimum flows and levels report (Leeper et al. 2010), and these figures support grouping with the Homosassa system. Examination of springshed boundaries included in Department of Environmental Protection GIS layers also supports the grouping of Bluebird and Hidden River springs in the greater Homosassa River system. Hidden River is grouped with Homosassa River springs in United States Geological Survey (e.g., Cherry et al. 1970, Knochenmus and Yobbi 2001) and District (e.g., Jones et al. 2011, Champion and Starks 2001) reports. Bluebird Springs is not mentioned in most reports that include information on Citrus County springs, although Scott et al. (2004) note that the Bluebird Spring run "travels an unknown distance westward virtually parallel to the Homosassa River and is presumed to eventually enter the river".

In summary, our staff are of the opinion that Hidden River and Bluebird Spring should be associated with Homosassa (WBID 1345), rather than with Chassahowitzka (WBID 1348). Otter Creek is in the correct Planning Unit – Homosassa, although the WBID number is still a 1348-

series. It might be advisable to revise the Homosassa Planning Unit boundary to include Hidden River Springs and Bluebird Spring, and also change the WBID designation of Otter Creek, Bluebird Spring and Hidden River to a 1345 series.
Julie, I hope this information is helpful, and I appreciate you contacting us regarding this matter.
Marty

Brad,
Thanks, also for copying me on this.
Marty

Documents Cited

Champion, K.M. and Starks, R. 2001. The hydrology and water quality of springs in west-central Florida. Southwest Florida Water Management District. Brooksville, Florida.
Cherry, R.N., Stewart, J.W. and Mann, J.A. 1970. General hydrology of the middle Gulf area, Florida. Report of Investigation No. 56. State of Florida Department of Natural Resources, Bureau of Geology. Tallahassee, Florida.
Jones, G.W., Upchurch, S.B., Champion, K.M and DeWitt, D.J. 2011. Water-quality and hydrology of the Homosassa, Chassahowitzka, Weeki Wachee, and Aripeka spring complexes, Citrus and Hernando counties, Florida – origin of increasing nitrate concentrations. Originally published in 1997, revised in March 2011. Southwest Florida Water Management District. Brooksville, Florida.
Knochenmus, L.A. and Yobbi, D.K. 2001. Hydrology of the Coastal Springs Ground-Water Basin and adjacent parts of Pasco, Hernando, and Citrus Counties, Florida. United States Geological Survey Water-Resources Investigations Report 01-4230. Tallahassee, Florida.
Leeper, D.A., Flannery, M.S., Kelly, M.H. and HSW Engineering, Inc. 2010. Recommended minimum flows for the Homosassa River system – July 12, 2010 peer-review draft. Southwest Florida Water Management District. Brooksville, Florida.
Scott, T.M., Means, G.H., Meegan, R.P., Means, R.C., Upchurch, S.B., Copeland, R.E., Jones, J., Roberts, T., and Willet, A. 2004. Springs of Florida. Florida Geological Survey Bulletin 66. Tallahassee, Florida.

From: Espy, Julie [mailto:Julie.Espy@dep.state.fl.us]
Sent: Thursday, November 17, 2011 9:43 AM
To: Brad Rimbey@CRRC
Cc: Dan Hilliard; Ron Miller; Marty Kelly; Kurisko, Paul
Subject: RE: Chronicle article on impaired waters

Brad,
Thanks for the additional info. Our planning unit designations are just boundaries primarily used to assist in breaking the state into smaller units. Unless the water management district is using our planning unit boundaries to define the areas they are designating for reduced flow, there really is no connection between the two as I see it. I agree that pollutant loading and flow are integrally related, but our planning unit boundaries do not create an obstacle for pollutant source identification or pollutant load reductions. When TMDLs are developed to address pollutant loading, they look at flows from all sources associated with a WBID.
That being said, we have followed up on this and based on information we have received from our springs folks the source of these springs lies within the Chassahowitzka River planning unit but the water that flows from the springs goes to the Homosassa River. So for the assessment of flow they may more accurately be associated with the Homosassa River, but for an assessment of water quality the sources of pollutants would be the Chassahowitzka area.
Marty, do have any input here? I'm not sure how you determined the groupings for both rivers, but if we need to change our planning unit boundary, we can.

Julie Espy
Environmental Administrator
Watershed Assessment Section
2600 Blair Stone Rd. MS3555

Tallahassee, FL 32399
850-245-8416
julie.espy@dep.state.fl.us

From: Brad Rimbey@CRRC [mailto:BWR.CRRC@tampabay.rr.com]
Sent: Wednesday, November 16, 2011 6:19 PM
To: Espy, Julie
Cc: Dan Hilliard; Ron Miller; Marty.Kelly@swfwmd.state.fl.us
Subject: Re: Chronicle article on impaired waters

Hi Julie,
After thinking about this, I think it does make a difference whether DEP's impaired springs grouping is consistent with SWFWMD's MFL springs grouping. As was discussed in the Nov 7, 2011 meeting in Homosassa, the relationship between pollutant concentration and spring flow rate is integrally related. Since SWFWMD is proposing to reduce the spring flow rate of the Chassahowitzka spring system unilaterally by 11% and reduce the spring flow rate of the Homosassa spring system unilaterally by 5%, it follows that DEP and SWFWMD need to be on the same page as to which spring flows are to be degraded by SWFWMD's proposed amounts.
I am copying Marty Kelly at SWFWMD with this email in case he would like to contribute an opinion.
Brad W. Rimbey for the
Chassahowitzka River Restoration Committee
----- Original Message -----

From: Espy, Julie
To: mailto:Rimbey@CRRC
Cc: Ron Miller
Sent: Tuesday, November 15, 2011 9:02 AM
Subject: RE: Chronicle article on impaired waters

Hi Brad,
Thank you for the link to the article in the Chronicle. In response to your question, while it would be best for our grouping to match that of the MFL our planning unit designation does not have any real significance with regard to assessment or restoration. We will follow up with our springs group here and the water management district to determine if we need to change anything. Thank you for bringing this to our attention.
Julie Espy
Environmental Administrator
Watershed Assessment Section
2600 Blair Stone Rd. MS3555
Tallahassee, FL 32399
850-245-8416
julie.espy@dep.state.fl.us
Please take a few minutes to share your comments on the service you received from the department by clicking on this link DEP Customer Survey.

From: Brad Rimbey@CRRC [mailto:BWR.CRRC@tampabay.rr.com]
Sent: Monday, November 14, 2011 3:59 PM
To: Espy, Julie
Cc: Ron Miller
Subject: Fw: Chronicle article on impaired waters

Hi Julie,
It was nice to meet you at last week's meeting in Homosassa. I was reading the Chronicle's

coverage of the meeting at
http://www.chronicleonline.com/content/dep-explains-impaired-water-body-restoration-plan and I have a question.
Both Bluebird and Hidden River Springs are listed as part of the Chassahowitzka group in the article. However, according to the SWFWMD MFL grouping, both Bluebird and Hidden River should be associated with the Homosassa Group. The source of the Chronicle's information appears to be DEP.
http://www.dep.state.fl.us/water/watersheds/assessment/docs/303d/group5/revised/spct-vl-c2-rev.pdf
This link shows the location of these springs
http://publicfiles.dep.state.fl.us/dear/watershed/Springs%20Coast%20-%20Springs%20Reports/Group5_Hidden%20River%20Springs_final.pdf
Should the DEP impaired waters group listing of Bluebird and Hidden River be consistent with the SWFWMD MFL grouping?
Brad W. Rimbey for the
Chassahowitzka River Restoration Committee

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Checked by AVG - www.avg.com
Version: 2012.0.1869 / Virus Database: 2092/4606 - Release Date: 11/09/11
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Version: 2012.0.1873 / Virus Database: 2102/4667 - Release Date: 12/08/11
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.

May 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning status of minimum flows development for the Homosassa and Chassahowitzka River systems

---

This memorandum documents an e-mail from Martyn Johnson to various individuals that was copied to District staff. The e-mail addresses the status of minimum flows development of the Chassahowitzka and Homosassa River systems.

DAL
Attachment

From:	Alan Martyn Johnson
To:	Al Grubman; Brad Rimbey; Brent Whitley; manatees2@gmail.com; Dan Hillard; ktripp@savethemanatee.org; Norman Hopkins; rebecca.bays@bocc.citrus.fl.us; Ron Miller; Bill Garvin; al.yerian@dep.state.fl.us; cedwards@savethemanatee.org; jones@myfwc.com; Dana Bryan; Jim Bitter; bknight@wetlandsolutionsinc.com; robert.knight@bocc.citrus.fl.us
Cc:	Doug Leeper; Mark Hammond; Sid Flannery; J Weaver; R Rodriguez; Kevin J Grimsley; Ron Basso; Mike Heyl
Subject:	Chassahowitzka and Homosassa MFL"s
Date:	Sunday, May 13, 2012 4:34:31 PM

Are you like myself curious as to why it is taking SWFWMD so long to rewrite the MFL Draft Reports for the Homosassa and Chassahowitzka?
May be they are doing some additional studies;
May be they are having confidence concerns re studies/data in the first draft reports;
May be they are having difficulty finding the right words to make the argument supporting continued increases in the amount of water being sucked out of the aquifer.
May be delays have political considerations regarding compliance.
May be they have realized Significant Harm has already occurred.

That is a lot of may be(s).

Let me share some points/indicators which should give cause for concern about the future of these two rivers/spring systems; Outstanding Florida Waters. And provide a backdrop for your reading the reports.

Homosassa

SE Fork

Some of you may know that I take regular samples of water emanating from the springs in the SE Fork and conduct my own flow monitoring using a floating orange/stage area under Fishbowl Bridge (yes old fashioned but no need for regression uncertainties).

1. Flows at the Fishbowl Bridge are very significantly less than in January.
2. Flows from Abdoney and Belcher Springs are now virtually zero at high stage.
3. Specific Conductance at all the springs has increase almost 50% since January.
4. USGS Field Measurements February 8-9, 2012 show results approx 10% less than calculated flows.
5. Still no word on hourly data from the velocity meter installed last September.

Main Spring

1. Specific Conductance of water emanating the main spring continues to increase (salt water ingress) and shows significant increase at high stage; indications are flow of better quality water from the aquifer is reducing.
2. Only two spot check Field Measurements are reported for flow Feb 3 and April 10

Chassahowitzka

1. Early in the year I shared e-mails from SWFWMD regarding MFL's Rule 40D.8.041 and reference to previous days flow. The draft rule was withdrawn from the November 2010 meeting agenda; possibly someone realized Crab Creek adds to the flow only a couple of hundred feet downstream from the gage site 02310650. Keep your eyes open for the new wording.
2. It was pointed out USGS Specific Conductance data at the Gage Site show continued increase during times the calculated flow from the springs is reported as changing from reverse to positive. No explanation or follow up to better understand, o*ther than four*

extended kayak trips by myself.

3. It was pointed out Hydrodynamic Model referenced in the Draft Report was calibrated using reconstructed data which differs on average 5% to USGS data. No comments/explanation offered.
4. From personal observation the flow does not reverse until over an hour after the calculated results indicate. Is the discharge cfs equation erroneous?
5. At high stage the salt water ingress into the main vent significantly increases. The specific conductance of water emanating from the main spring at high stage is now almost equivalent to the water from Crab Creek Spring.

Weeki Wachee Well

1. Since January Weeki Wachee Well level has dropped faster than any corresponding period in history. Without Mother Nature providing some long term steady rainfall historic lows may be reached. Historic low was May 13, 2009 at 10.67 feet dropping from 13.10 feet Jan 1, 2009. Today level is 11.08 feet having dropped from 13.72 feet on Jan 1, 2012. Do the math.
2. The well level has not been above 16 feet since March 5, 2006; historically levels reached close to 20 feet on a regular basis.
3. Level in the aquifer is a major factor driving spring flow (Weeki Wachee considered a primary indicator), hence it is clear that the spring flows could be historically and possibly critically low.

USGS Investigation

A USGS head office review of spring flow data collection/calculation was conducted January 22-24. The review as reported was lacking specific details, but commented;

"found no major problems with the operation of gages or the calculation of streamflow records."

Comment: The future of Chazz and Homosassa is critical on small changes of flow 5%.

And

"Accurately documenting any flow asymmetry likely will require collecting measurements over the duration of at least one full tidal cycle."

Comment: Report does not list locations, but for SE Fork no record of Field Measurements over a full tidal cycle; Feb 8-9 was 11 hours on 8th plus 3 hours on 9th .

And

"*While measurements were seen to generally compare well to the rating curve, we recommend that the equations be updated.*

Comment: Compare well, but recommend update?

And

"While Knochenmus and Yobbi's original equations were documented in report WRIR 2001-4230, the newer regression equations that are currently in use are not as well documented.

SWFWMD Clarity Re MFL

Specific questions have been asked about what the Minimum Flow is, SWFWMD replies appear elusive, such as;

You wrote: "1. Is baseline for establishing Minimum Flow for the Homosassa River 152 cubic feet per second combined flows from the USGS gage sites Homosassa Main Spring and SE Fork of Homosassa River (Executive Summary, Draft Peer Review July 2010).

YES

NO”

Response: No – As used for development of the proposed minimum flows, ‘baseline’ simply refers to a statistical metric (typically median) characterizing conditions associated with a specific period of flow (benchmark period). For the Homosassa system, two benchmark periods, calendar year 2007 and October 18, 1995 through May 13, 2009, were used to develop minimum flow recommendations. Combined flow records for the USGS Homosassa Main Spring and SE Fork Homosassa River for each benchmark period were used to characterize baseline conditions such as the volume of salinity-based habitat associated where salinities were less than or equal to 5. The baseline conditions evaluated for each benchmark period were associated with the respective median flows, *i.e.*, 130 cfs for the 2007 benchmark period and 150 cfs for the 1995-2009 benchmark period. Because median benchmark flows were used for the analyses, it may be expected that one-half of the flow values during each benchmark period were lower than the median values. Finally, it should be noted that the 152 cfs average flow value included in the Executive Summary of the draft minimum flows report represents the average or mean combined flow for the longer benchmark period, rather than a median value.

You wrote: “3. Is the recommended minimum flows for the Homosassa River system defined as a five percent reduction from baseline flows of 152 cfs which is minimum flow 144 cfs.

YES

NO”

Response: No -- The recommended minimum flows for the Homosassa River system are an allowable percentage of flow reduction from the natural flow condition, which is defined as the flows that would exist in the absence of water withdrawals.

And for Chazz

“The proposed Chassahowitzka MFL is a percentage o flow, not a fixed number and is not directly related to a long-term median. The MFL is a percent of flow and the actual withdrawal varies with the flow, not a historic median. As discussed later, the 63 cfs flow rate is not an MFL criterion.”

No doubt we will all read the revised draft MFL reports in detail once issued, but lets hope the comments made and the concerns expressed about the HARM which has already occurred in these rivers was recognized by SWFWMD.

Martyn

June 8, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence between Martyn Johnson and Kevin Grimsley concerning measurement of discharge in the Southeast Fork of the Homosassa River and the status of minimum flows development for the Homosassa and Chassahowitzka River systems

---

This memorandum documents correspondence between Martyn Johnson and Kevin Grimsley, with the U.S. Geological Survey, regarding measurement of discharge in the Southeast Fork of the Homosassa River.

DAL
Attachments

From:	Alan Martyn Johnson
To:	Kevin J Grimsley
Cc:	Doug Leeper
Subject:	SE Fork Homosassa 02310688 Gage Height Sensor
Date:	Monday, June 04, 2012 8:15:18 AM

I have been quietly waiting the MFL Reports, but that does not mean I have not been watching the continued declines in both the Homosassa and Chazz. It appears sea water ingress into the spring flow is increasing significantly. After over a month away I plan to be in Homosassa later this week and will be interested to see how each of the springs in the SE Fork have changed.

However, that is not the promoter of this e-mail.

It appears there is a problem with the Gage Height Sensor at the SE Fork monitoring station; between 15:30 and 15:45 on May 30 the sensor appears to have been compromised in someway causing the reported level to drop from 1.60 to 0.49 and the calculated discharge to be 514 cfs.

It is possible that you may already have noticed this and have plans to check, but as it does not appear to be self correcting, thought I would e-mail you.

Martyn

From:	Kevin J Grimsley
To:	Alan Martyn Johnson
Cc:	Doug Leeper
Subject:	Re: SE Fork Homosassa 02310688 Gage Height Sensor
Date:	Monday, June 04, 2012 11:01:40 AM

Hi Martyn,

Yes, the transducer at SE Fork appears to have been tampered with. A technician will check it out either this afternoon or first thing tomorrow. We had seen the same thing this morning, but thank you for the email to make sure the issue was addressed.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

On Jun 4, 2012, at 6:15 AM, "Alan Martyn Johnson" <martynellijay@hotmail.com> wrote:

> I have been quietly waiting the MFL Reports, but that does not mean I have not been watching the continued declines in both the Homosassa and Chazz. It appears sea water ingress into the spring flow is increasing significantly. After over a month away I plan to be in Homosassa later this week and will be interested to see how each of the springs in the SE Fork have changed.
>
> However, that is not the promoter of this e-mail.
>
> **It appears there is a problem with the Gage Height Sensor at the SE Fork monitoring station; between 15:30 and 15:45 on May 30 the sensor appears to have been compromised in someway causing the reported level to drop from 1.60 to 0.49 and the calculated discharge to be 514 cfs.**
>
> It is possible that you may already have noticed this and have plans to check, but as it does not appear to be self correcting, thought I would e-mail you.
>
> Martyn

June 08, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence concerning comments submitted by the Citrus County Audubon Society regarding development of minimum flows for the Chassahowitzk and Homosassa River systems

---

This memorandum documents correspondence between stakeholders from the Board of Directors, Officers and members of the Citrus County Audubon Society and Southwest Florida Water Management District concerning development of minimum flows for the Chassahowitzk and Homosassa River systems. Input from the Society was provided via a comment button on the District Springs Coast Working Group web page and through correspondence submitted directly to District Governing Board member and the Executive Director, Blake Guillory.

DAL
Attachments

From:	WaterMatters.org
To:	nkost@tampabay.rr.com
Cc:	Doug Leeper
Subject:	Thanks for your Springs Coast MFL working group comments
Date:	Monday, May 28, 2012 9:48:41 AM

Hi Nancy,

Thank you for your comments concerning the District's Springs Coast Minimum Flows and Levels Workshop Series.

Thank you for your comments concerning the District's Springs Coast Minimum Flows and Levels Workshop Series. Your input will be reviewed and will support management decisions regarding the data and methods used to establish and/or reevaluate minimum flows for important river and spring systems of the Springs Coast.

Please Note: At this time the District will not be responding to submitted comments.

Your Comments:

Date: May 28, 2012 To: SWFWMD Governing Board Members and Executive Director Blake Guillory From: Citrus County Audubon Society Board of Directors RE: Request for no reduction of flows and levels for our waterways We understand that the SWFWMD Governing Board will soon be considering Minimum Flows and Levels (MFLs) for the Chassahowitzka and Homosassa Rivers in Citrus County. The Board of Directors, Officers and members of Citrus County Audubon Society strongly urge you to not reduce the current flows and levels and thereby help restore the health of these Outstanding Florida Waters and not cause them further harm. Once crystal-clear, these two rivers are now seriously impaired by pollution from leaking septic tanks, direct discharge of sewerage, run-off from roads and parking lots, fertilizer and lawn chemicals, loss of native sea grasses, proliferation of lyngbya, and salt water intrusion, etc. Aquatic life of these river ecosystems is clearly endangered. In far too many locations, the flow of the springs in these rivers is gravely reduced or stopped altogether, and in some areas the river bottoms, devoid of grasses and covered by smothering layers of slime, cannot even hold an anchor. Trees are dead or dying along the rivers, and barnacles well upstream from the gulf are proof of salinity. Fresh water bass, once prolific, are now rarely seen. The Chassahowitzka and Homosassa Rivers were both designated as Outstanding Florida Waters and Special Waters on January 5, 1993 when they each met the necessary water quality standards. They are now both listed as "impaired" on the State's Integrated Water Quality Assessment and an enormous amount of work needs to be done in order to bring them back. You may not be fully aware of the seriousness of the situation; therefore, we would be happy to arrange for a tour to point out the problems listed above first hand. As the decision makers for SWFWMD, we feel a personal awareness of this situation is essential prior to your decision on MFL of our rivers. Sincerely, CCAS Directors Jean Freidner Thomas Gulley Nancy Kost Diane Moseley CCAS Officers Darrell Snedecor, President Ginger Privat, Vice President Fred Hileman, Secretary Sue Albertson, Treasurer

From:	Gwen Brown
To:	Doug Leeper; Mike Heyl
Cc:	Jerry Mallams; Veronica Craw; Kenneth R. Herd; Jet Houser
Subject:	FW: Log Entry # 1.11.139860 05-29-2012 Nancy Kost Citrus County Audubon Society
Date:	Tuesday, May 29, 2012 2:08:06 PM

Doug & Mike,

FYI only. No response necessary.

Thanks,

Gwen

-----Original Message-----
From: Dianna Brass
Sent: Tuesday, May 29, 2012 9:44 AM
To: Gwen Brown; Jet Houser
Cc: Debby Weeks
Subject: FW: Log Entry # 1.11.139860 05-29-2012 Nancy Kost Citrus County Audubon Society

FYI...
Dianna Brass, Adm. Spvr.
SWFWMD Board & Exec. Svcs.
352-796-7211, Ext.4604

-----Original Message-----
From: CollabAdmin [mailto:collabadmin@swfwmd.state.fl.us]
Sent: Tuesday, May 29, 2012 9:43 AM
To: Dianna Brass; Kenneth R. Herd
Subject: Log Entry # 1.11.139860 05-29-2012 Nancy Kost Citrus County Audubon Society

Please click on the following link to open the document(s) (District PC Use Only)

http://bkvvmecm01p.ad.swfwmd.net/gm/folder-1.11.139860

Subject: Request for no reduction of flows and levels (MFLs) for Chassahowitzka and Homosassa Rivers in Citrus County.

Following is the tracking information for the above information:

Log#: 1.11.139860
Assigned To: Kenneth Herd
Assigned By: Dianna Brass
Date Assigned: 05-29-2012
Date Completed: 05-29-2012
Date Required:

Source: Nancy Kost Citrus County Audubon Society
Instructions: For your information and appropriate disposition.
Action Taken: Lou Kavouras will contact Board members re potential tours.

From: Nancy Kost [mailto:nkost@tampabay.rr.com]
Sent: Monday, May 28, 2012 10:00 AM
To: Executive; Blake Guillory
Subject: Request for no reduction of flows and levels for our waterways

Citrus County Audubon Society

Dedicated to the conservation of our wildlife and natural resources through education and community support

Date: May 28, 2012

To: SWFWMD Governing Board Members and Executive Director Blake Guillory

From: Citrus County Audubon Society Board of Directors

RE: Request for no reduction of flows and levels for our waterways

---

We understand that the SWFWMD Governing Board will soon be considering Minimum Flows and Levels (MFLs) for the Chassahowitzka and Homosassa Rivers in Citrus County.

The Board of Directors, Officers and members of Citrus County Audubon Society strongly urge you to not reduce the current flows and levels and thereby help restore the health of these Outstanding Florida Waters and not cause them further harm.

Once crystal-clear, these two rivers are now seriously impaired by pollution from leaking septic tanks, direct discharge of sewerage, run-off from roads and parking lots, fertilizer and lawn chemicals, loss of native sea grasses, proliferation of lyngbya, and salt water intrusion, etc.

Aquatic life of these river ecosystems is clearly endangered. In far too many locations, the flow of the springs in these rivers is gravely reduced or stopped altogether, and in some areas the river bottoms, devoid of grasses and covered by smothering layers of slime, cannot even hold an anchor. Trees are dead or dying along the rivers, and barnacles well upstream from the gulf are proof of salinity. Fresh water bass, once prolific, are now rarely seen.

The Chassahowitzka and Homosassa Rivers were both designated as Outstanding Florida Waters and Special Waters on January 5, 1993 when they each met the necessary water quality standards. They are now both listed as "impaired" on the State's Integrated Water Quality Assessment and an enormous amount of work needs to be done in order to bring them back.

You may not be fully aware of the seriousness of the situation; therefore, we would be happy to arrange for a tour to point out the problems listed above first hand. As the decision makers for

SWFWMD, we feel a personal awareness of this situation is essential prior to your decision on MFL of our rivers.

Sincerely,

CCAS Directors
Jean Freidner
Thomas Gulley
Nancy Kost (352/628-0698)
Diane Moseley

CCAS Officers
Darrell Snedecor, President
Ginger Privat, Vice President
Fred Hileman, Secretary
Sue Albertson, Treasurer

June 8, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence between Martyn Johnson and Kevin Grimsley concerning measurement of discharge in the Southeast Fork of the Homosassa River and the status of minimum flows development for the Homosassa and Chassahowitzka River systems

---

This memorandum documents correspondence between Martyn Johnson and Kevin Grimsley, with the U.S. Geological Survey, regarding measurement of discharge in the Southeast Fork of the Homosassa River.

DAL
Attachments

From:	Alan Martyn Johnson
To:	Kevin J Grimsley
Cc:	Doug Leeper
Subject:	SE Fork Homosassa 02310688 Gage Height Sensor
Date:	Monday, June 04, 2012 8:15:18 AM

I have been quietly waiting the MFL Reports, but that does not mean I have not been watching the continued declines in both the Homosassa and Chazz. It appears sea water ingress into the spring flow is increasing significantly. After over a month away I plan to be in Homosassa later this week and will be interested to see how each of the springs in the SE Fork have changed.

However, that is not the promoter of this e-mail.

It appears there is a problem with the Gage Height Sensor at the SE Fork monitoring station; between 15:30 and 15:45 on May 30 the sensor appears to have been compromised in someway causing the reported level to drop from 1.60 to 0.49 and the calculated discharge to be 514 cfs.

It is possible that you may already have noticed this and have plans to check, but as it does not appear to be self correcting, thought I would e-mail you.

Martyn

From:	Kevin J Grimsley
To:	Alan Martyn Johnson
Cc:	Doug Leeper
Subject:	Re: SE Fork Homosassa 02310688 Gage Height Sensor
Date:	Monday, June 04, 2012 11:01:40 AM

Hi Martyn,

Yes, the transducer at SE Fork appears to have been tampered with. A technician will check it out either this afternoon or first thing tomorrow. We had seen the same thing this morning, but thank you for the email to make sure the issue was addressed.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

On Jun 4, 2012, at 6:15 AM, "Alan Martyn Johnson" <martynellijay@hotmail.com> wrote:

> I have been quietly waiting the MFL Reports, but that does not mean I have not been watching the continued declines in both the Homosassa and Chazz. It appears sea water ingress into the spring flow is increasing significantly. After over a month away I plan to be in Homosassa later this week and will be interested to see how each of the springs in the SE Fork have changed.
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>
> Martyn

June 11, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: E-mail submitted by the Brent Whitley concerning minimum flows for Springs Coast systems

---

This memorandum documents an e-mail submitted to several Southwest Florida Water Management District staff by Mr. Brent Whitley. The e-mail includes several recommendations concerning development of minimum flows for Springs Coast systems.

DAL
Attachment

From:	Brent Whitley
To:	Marty Kelly; Mike Heyl; Doug Leeper; Ron Basso
Cc:	martynellijay@hotmail.com; grubman1@gmail.com; BWR.CRRC@tampabay.rr.com; 2buntings@comcast.net; cathyharrelson@gmail.com; rmille76@tampabay.rr.com; whmarkle@gmail.com; bknight@floridaspringsinstitute.org; Peter Hubbell; sonnyvergara@bellsouth.net; Mark Hammond; mnewberger@verizon.net; eprgroupqueen@mac.com; ekelly@tnc.org; senft1hp2u@aol.com; hgramling@tbwg.org; dtharp@embarqmail.com; Albert@sarasoaconservation.org; neilcombee@yahoo.com; todd@pressmaninc.com; rasjudy@tampabay.rr.com; jadams@abbeyadams.com; CarlosB@Medallionhome.com; michael@2riversranch.net; jclosshe@tampabay.rr.com; Eric.Shaw@dep.state.fl.us; johnncms@tampabay.rr.com; blogan@atlantic.net; Bobby Lue; Blake Guillory; fritzlandwater@tampabay.rr.com; Rebecca.Bays@bocc.citrus.fl.us; abrockway@co.hernando.fl.us; bev.chuck2@verizon.net; dmanson@floridah2olaw.com; Herschel.Vinyard@dep.state.fl.us; gwkuhl@gmail.com; tforsgren@ccaflorida.org; jbitter@tampabay.rr.com; JJ.Kenney@bocc.citrus.fl.us; Joe.Meek@bocc.citrus.fl.us; Julie.Espy@dep.state.fl.us; jvarn@fowlerwhite.com; mcorona1@tampabay.rr.com; mczerwinski@mgcenvironmental.com; bgeiger@cityofbrooksville.us; Boyd_Blihovde@fws.gov; Dennis3ds@aol.com; ted.hoehn@MyFWC.com; jfarley682@aol.com; ktripp@savethemanatee.org; norman@amyhrf.org; rkane@usgs.gov; Carolyn.Voyles@dep.state.fl.us; Clark Hull; danmorgan@tampabay.rr.com; Dana Gaydos; Cliff Manuel; greg.holder@myFWC.com; ladyfishlori@yahoo.com; Dave.Mulholland@MyFWC.com; masonwilliam@bellsouth.net; Paul Williams; RGehring@pascocountyfl.net; rschenck@vzw.blackberry.net; jnvacha@ci.brooksville.fl.us
Subject:	Springs Coast MFLs must be conservative
Date:	Thursday, December 01, 2011 4:56:41 PM

Marty, Mike, Ron, and Doug,

Thanks to each of you for working with the Stakeholders for the Springs Coast Working Group in assisting in the coordination of the October 26th workshop in Lecanto. I realize this has been a long and tedious process for each of you and that we as a group have garnered much of your time in seeking information, data and responses to our questions as to the basis for the upcoming proposal for the MFL's for the four Springs Systems on the Nature Coast. However, given the sensitivity of the ecology of these systems, the desire on the part of the Stakeholders to be fully informed as they review your efforts, and the potential for immeasurable negative impact to the economy of the Nature Coast if the springs systems collapse, makes it imperative that we work together to be certain that we do not go down an irreversible path.

I trust that you each listened with interest to the presentations by Dr. Kincaid and Dr. Knight at the October Workshop. I thought it interesting that when it was decided that the Stakeholders would have the opportunity to present expert witness testimony that we would be so fortunate to get these two respected gentleman to voluntarily make presentations that were so insightful and objective. I think it is safe to say that they are experts and offered some very meaningful food for thought as you analyze your data in preparing the recommended proposals for the MFLs. With that said, I do not want you to think in any way I am belittling your expertise and/or your ability to analyze the "best information available" because I have been assured by many outside the District that you are all imminently qualified as scientists and biologists. Nevertheless, I am concerned that your efforts to utilize this "best information available" to construct a model for the purpose of developing another MFL, has led you down a narrow minded path that ignores some fundamental facts and common sense issues. Therefore, I want you to strongly consider the following.

I do not think we, as members of the Springs Coast Working Group and stakeholders, are calling into question your science that has made the determination that a proposed MFL is going to cause 15% Significant Harm to the ecology of the systems. Yes, quite frankly, I think we all believe that this proposed drawdown is going to cause **at least** 15% Significant Harm or "DESTRUCTION to the River", as Mickey Newberger phrases it. We do question your support that this level of harm is OK

and that by referencing decisions from other jurisdictions and even other, unrelated scientific analyses which have recognized that this level of harm is acceptable somehow provides justification to your proposal. Both Dr. Kincaid and Dr. Knight suggest that an **MFL SHOULD** be set; better to do something than nothing and then let rampant withdrawals in the spring sheds continue. However, what I implore you to do and trust that you will do, is be cautious and conservative as both the good Doctors recommended. Both stated that there is NOT enough data to know with certainty that these proposed MFLs will only cause 15% Significant Harm to the habitat and that likely there will not be sufficient monitoring to insure that we do not tip the scales beyond that. Once we go too far, recovery may never bring us back. Why would you want to intentionally inflict this much harm? Both experts feel there is sufficient data based on the failing ecologies of other springs systems to support that the Springs Coast systems are RAPIDLY DETERIORATING, and piling on more harm is an unreasonable approach to protecting these unique natural resources.

Below are some bullet points from a letter I sent Dave Moore in March of this year suggesting just such a conservative approach in regards to the Chassahowitzka proposed MFL. I have highlighted the specific reference. Sorry to bore you with this again but I am sending this email to others who may not have seen that first letter and I still feel there is merit to this content that is worth revisiting.

1. **Lower MFL allowable drawdown** - According to Ron Brasso's presentation at the workshop, the water needs for the 2030 BEBR projections would in effect create a 2.3% drawdown of the natural flow. Why not set the MFL at that 2.3% and review it every 5 years to see what affect this has on the ecology as the drawdown increases from the current .7% caused by groundwater pumpage. That would build a 20 year data set. You would think we might learn something about these unique systems in that time frame.
2. **Monitoring** - Create a specific comprehensive monitoring program that goes far further than Mike Heyl suggested was the plan that is to continue to monitor flow, salinity etc., but not biological. Use a system of aerial photographs like being required of the Desalination Plant in Tampa Bay to assess the sea and river grass habitats. While I realize these monitoring programs are costly when it comes to biological counts, etc, just how much is this worth to the entire Coastal economy?
3. **Economic Assessment** - Consider an economic assessment of what the continued decline of these spring systems is likely to do to the local economies, many of which depend on the health of the fisheries and clear water springs. You may find there is a greater than 15% significant harm to humans. How do we treat that?
4. **Partnership with the community** - Take ownership of the River as part of the refuge since you actually **OWN** most of it. Become a partner with the Chassahowitzka Restoration Committee and initiate a recovery of sorts along with the upcoming effort to clean and dredge the headwater systems to restore the quality of the water body. Genuinely work with the Port Authority and the FWC to stop innocent but destructive prop-scarring of the River bottom by those untrained on the River. The management plan suggested 20 years ago to put in some simple non-invasive channel markers. This is still not done and the destruction by prop scarring continues. The community would provide support and labor to this effort.
5. **Alternative Water Supply Plan** - Simply put, work to develop a water supply plan for the region that does not rely on groundwater thus allowing the drawdown of these

systems and in effect, create a **Bank** of water supply for the District to issue **Water Use Permits** (bet you never thought you would hear that from a developer).

Finally, and to coin a phrase from the latest political agenda of right-sizing the Water Management Districts – "We want to get the Districts back to their core responsibilities." I thought that is an interesting way to assess and focus the direction of water management. I wondered what those core responsibilities are, so I looked into it. You might recognize this:

Mission Statement

The mission of the Southwest Florida Water Management District (SWFWMD) is to manage water and related natural resources to ensure their continued availability while <u>maximizing environmental, economic and recreational benefits.</u> To identify the critical programmatic areas necessary to fulfill our crucial mission, the SWFWMD created a strategic planning program intended to provide information to our stakeholders and guidance to our staff regarding our pathway toward <u>superior stewardship of our water resources.</u>

So I ask you gentleman, as you plan to propose the willing destruction of 15% of the ecology and habitat of the Chassahowitzka River and the other Springs Coast Systems, all Outstanding Florida Waters I might add, does that fall within the guidance of the Mission Statement and returning to your core values?

While I realize you have a responsibility to develop potential water resources to ensure their continued availability, I do not think I stand alone when I say that **<u>maximizing environmental, economic and recreational benefits</u> should at least carry equal weight to your scientific analysis when you prepare your recommendations for MFLs of systems that provide <u>these exact societal benefits for the citizens of this District</u>** and that if the **habitats** of these rivers could speak for themselves they would be screaming for protections. Actually, and now that I think about it as I ride the Chassahowitzka, I realize the habitat is already screaming.

Take heed, Gentlemen and may you recommend wisely with an eye toward the future for our children and theirs.

With regards,

Brent Whitley

July 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence between Martyn Johnson and Kevin Grimsley concerning measurement of discharge in the Southeast Fork of the Homosassa River

---

This memorandum documents correspondence between Martyn Johnson and Kevin Grimsley, with the U.S. Geological Survey, regarding measurement of discharge in the Homosassa River system.

DAL
Attachments

From: Alan Martyn Johnson
To: Kevin J Grimsley
Cc: Doug Leeper
Subject: RE: SE Fork Homosassa 02310688 Gage Height Sensor
Date: Saturday, June 23, 2012 7:32:15 AM

Kevin,
Thanks for the e-mail response. Got back to Atlanta yesterday, did not visit the library in Homosassa hence the delay in this response.

In reviewing the USGS data on-line I notice the Gage Height data has been reconstructed for the time period May 30, 15:45 to when ever the tranducer was fixed. I would have thought the erroneous data would have been deleted as has the erroneous 514 cfs discharge.

Would appreciate a brief explanation of policy and procedure by which the record is reconstructed. I realize that there is the gage at the main springs that does give credence to the validity of reconstruction, but would have thought the policy would be that data from an equipment fault would have been removed/deleted from the record...just makes me question how often data is 'reconstructed'.

Any news on the velocity meter.
As far as I can see the only Field Measurements over an extended period were done in February 8 and 9 and were at a time when stage change was slow/low most of the time.

Readings I made while in Homosassa over the last two weeks are some of the lowest flow figures I have seen. Flow was monitored (using six floats and flow streamers at the bottom, 6 inches and 12 inches from the bottom) reverse flow along the bottom left half of the stream extending to the upstream side of the bridge. This reverse flow is only along the bottom with positive flow thru most of the depth and on the right half full depth. Surface water Specific Conductivity remained around 1700. Abdoney and Belcher Springs had almost no flow at high stage. Trotter Spring was barely noticeable as a surface 'boil' and Pumphouse discharge was also way down at high stage. Specific Conductance reading from each of the springs is up about 50% from earlier in the year. This is also evident in the USGS readings that have gone from 1100 to over 1600.

Guess the only hope is for some unusually heavy rains!

Martyn

To: martynellijay@hotmail.com
Date: Mon, 4 Jun 2012 11:25:46 -0400
From: kjgrims@usgs.gov
Subject: Re: SE Fork Homosassa 02310688 Gage Height Sensor
CC: doug.leeper@swfwmd.state.fl.us

Hi Martyn,

Yes, the transducer at SE Fork appears to have been tampered with. A technician will check it out either this afternoon or first thing tomorrow. We had seen the same thing this morning, but thank you for the email to make sure the issue was addressed.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa

USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

On Jun 4, 2012, at 6:15 AM, "Alan Martyn Johnson" <martynellijay@hotmail.com> wrote:

> I have been quietly waiting the MFL Reports, but that does not mean I have not been watching the continued declines in both the Homosassa and Chazz. It appears sea water ingress into the spring flow is increasing significantly. After over a month away I plan to be in Homosassa later this week and will be interested to see how each of the springs in the SE Fork have changed.
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> However, that is not the promoter of this e-mail.
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> It is possible that you may already have noticed this and have plans to check, but as it does not appear to be self correcting, thought I would e-mail you.
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> Martyn

From:	Kevin J Grimsley
To:	Alan Martyn Johnson
Cc:	Doug Leeper
Subject:	Re: SE Fork Homosassa 02310688 Gage Height Sensor
Date:	Saturday, June 23, 2012 9:55:35 AM

Martyn,

Yes, the gage height data has been corrected because it was not due to equipment malfunction. As I speculated at the time, someone had moved the sensor and not placed it back correctly. So it was a simple matter of applying an offset equal to the change in elevation that the sensor experienced.

The velocity meter is operating well and we are on schedule to develop the discharge rating on the 6 to 12 month schedule we've specified previously.

I join you in hoping for some good rain. It's been a long dry season this year, and we certainly need it.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
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Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
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Martyn

From: Kevin J Grimsley
To: Mike Heyl
Cc: Doug Leeper
Subject: Re: Chassahowitzka/Homosassa Discharge Measurements
Date: Saturday, June 23, 2012 8:13:45 PM

Mike,

I think I can answer both your questions by saying that none of the values found under the "field measurements" section should be used to represent a net daily flow. This is true for any of our gages. They are all "snapshots" of flow that only represent the conditions during the measurement itself. Let me know if there's anything else I can do to help.

****
Kevin Grimsley, P.E.
Hydrologic Data Chief, Tampa
USGS, Florida Water Science Center
10500 University Center Drive, Suite 215
Tampa, FL 33612
kjgrims@usgs.gov
813-498-5064
****

On Jun 22, 2012, at 10:13 AM, "Mike Heyl" <Mike.Heyl@swfwmd.state.fl.us> wrote:

> Kevin – As you are probably aware, several of the Springs Coast stakeholders have criticized the fact that the District is not using all of the historical flow data available for the Chassahowitzka and Homosassa Rivers. My example is specific to the Chassahowitzka 02310650, but the questions are relevant to both systems and there are two parts to this inquiry.
>
> <!--[if !supportLists]-->1) <!--[endif]-->I downloaded the field measurements of discharge from NWIS and I see that there is data back to 1930. All of the data from 1930 through1984 is represented by a single value for each calendar day. I assume that these are grab sample 'snapshot' measurements taken sometime during that calendar day and do not represent a net daily discharge at that location because of the tidal influence. Is this a good assumption?
>
> Beginning in 1984 it appears that on some calendar days, multiple discharge measurements were taken. I am aware of the change in measurement location that took place in 1997, but can any of the 1984-1997 measurements be used to represent a net daily discharge below Crab Creek?
>
> <!--[if !supportLists]-->2) <!--[endif]-->Beginning in 1997 there are some calendar days with single observations and others with up to 14 observations. Is there an easy way to determine which of these represent a net daily

discharge? For background on the second inquiry, I am trying to assess the relationship between lag rainfall and net daily discharge for these systems. My colleagues doing MFLs on lakes that are affected by groundwater withdrawals have had reasonable success in predicting lake levels and I would like to explore the technique for the Chassahowitzka / Homosassa but I need measured net daily discharges for one of the inputs. Now that you have stage in your regressions, do you even do tide-cycle measurements any longer?

Thanks in advance.

MGH
==========
Michael G. Heyl - Chief Environmental Scientist
Mike.Heyl@SWFWMD.state.fl.us or Mike.Heyl@WaterMatters.org
==========
Natural Systems and Restoration Bureau / SWFWMD (7:00 am - 3:30 pm)

7601 U.S. Highway 301 1-813-985-7481 Ext 2211
Tampa, Fl. 33637-6759 1-813-987-6747 (Fax)
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July 15, 2012

MEMORANDUM

TO: File

FROM: Douglas A. Leeper, Chief Environmental Scientist, Resource Evaluation Section, Southwest Florida Water Management District

SUBJECT: Correspondence from Martyn Johnson to Kevin Grimsley and Doug Leeper concerning specific conductance values in the Homosassa River system

---

This memorandum documents correspondence sent by Mr. Martyn Johnson to Kevin Grimsley, with the U.S. Geological Survey, and Doug Leeper, with the Southwest Florida Water Management District regarding specific conductance values in the Homosassa River system

DAL
Attachment

From: Alan Martyn Johnson
To: Doug Leeper; Kevin J Grimsley
Subject: Unusually High Specific Conductance SE Fork
Date: Tuesday, June 26, 2012 8:21:44 AM
Attachments: June 23 24 SE Fork High Spec C data.xls

Doug and Kevin,
Certainly pleased there is some rainfall, but would have hoped for better control of the faucet by Mother Nature!

But, quickly to my point as I am sure you have many other things to deal with…and I do not expect an immediate answer to this.

In reviewing the data for the Homosassa Gage Sites yesterday I noticed something rather unusual…Specific Conductance readings at the SE Fork site have some high readings, so high it is difficult to attribute these to waters reaching the gage site by reverse flow from the Blue Water. As you will see in the attached spreadsheet the water from the main springs has lower readings. Although readings in the first highlighted timeframe are higher at the Halls River Site; for the second highlighted interval the readings at Halls River are also lower. It is a real stretch to believe flow from the springs is so low that waters from this section of the river *'not specifically Halls River but the main body getting reverse flow from MacRaes'* are reaching all the way to the SE Fork.

This same phenomena can also be seen in the readings from last night to now.

Any thoughts about how this is possible?

I am speculation that one of the vents in the SE Fork is discharging some high Specific Conductance water and further speculate it is the vent only some 20 feet upstream of the Fishbowl Bridge on the right bank. Flow from the various other springs in the SE Fork must be almost zero under these high stage conditions. I have previously commented/observed this referenced vent opening at high stage and the water discharge being similar to the main springs, but this is unusual.. Is this subterranean seawater ingress big time? I am further puzzled as to why run off waters are not reducing the figures; you can see where rainwater run off dropped the readings to the 400's.

Another point that I have been watching is the frequency of higher specific conductance readings at Halls River Gage. When this site first came on-line in March, the readings indicated water from the main springs and SE Fork were most likely the water passing the site under reverse flow. As time progressed there has been more water which appears to be from the reverse flow at MacRaes. The recent increases of water level in the aquifer (at Weeki Wachee) does not appear to have increased spring flow to a point that was in March. The graphs on sheet 3 of the attachment help illustrate.

Velocity data from the SE Fork meter may help understand this.

When you get a chance would appreciate your thoughts on these points/unusual situations. Great coffee break conversation!

I trust that you have personally weathered Debby without too many problems.

Martyn