WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow January 8, 2019 **to** **January 14, 2019** **0 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	0 cfs
☑Regulatory Discharge	0 cfs
☐Potential Regulatory Discharge	0 cfs

-----Data Summary -----	**December 29, 2018**	**to**	**January 4, 2019**
WCA-3A Stage (end of week)	9.40		ft-NGVD
Angel's	5.23		ft-NGVD
G-3273	6.03		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.04	0.91
S-140		0.90
ENP		M
This Week's Avg	0.04	0.90
Pre-Project Avg	0.27	0.75

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		0	cfs
Distance to Bottom of Current Zone		N/A	feet
Distance to Top of Current Zone		0.58	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.18	17.06	0	
WCA-2A		12.00	11.44	40,960	
Others				0	
Total Storage Adjustment				40,960	0.10
WCA-3A	9.40				
Adjusted WCA-3A	**9.50**				

Adjusted WCA-3A is in Zone	**E**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		0	cfs
Distance to Bottom of Current Zone		-0.08	feet
Distance to Top of Current Zone		0.48	feet

-----Statistical Parameters -----

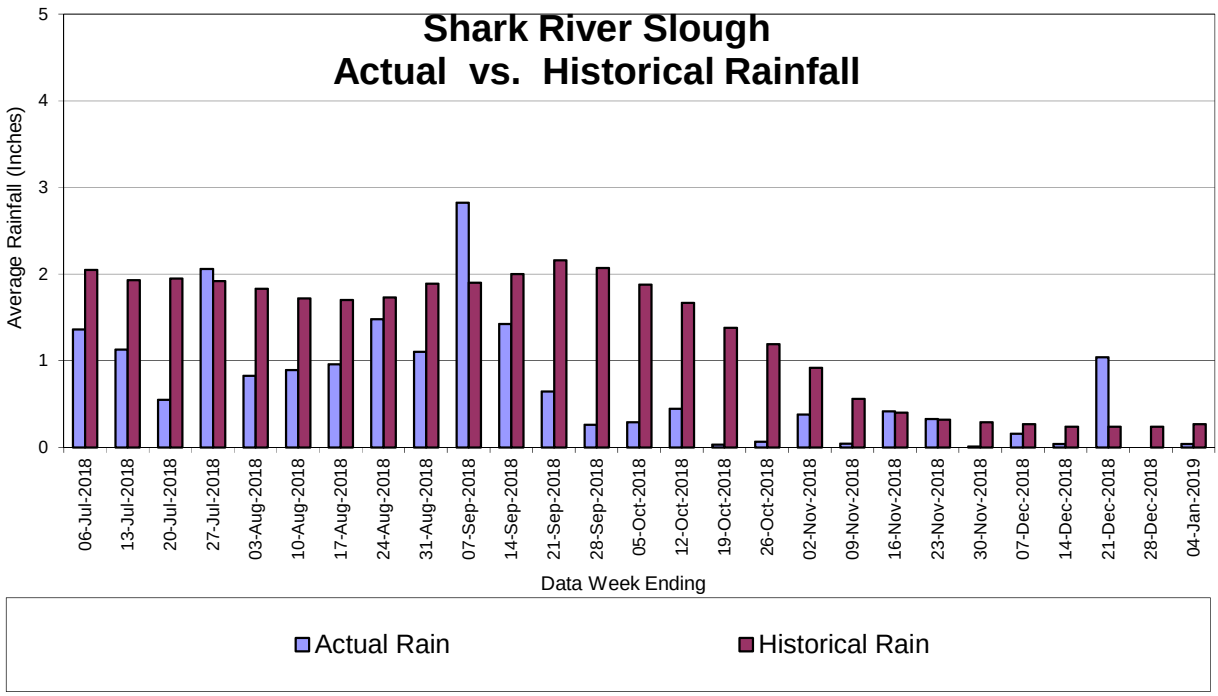
Rainfall Formula Amount	-333 cfs
Last Week's Rainfall Formula	-318 cfs
Pre-project Mean Discharge	247 cfs

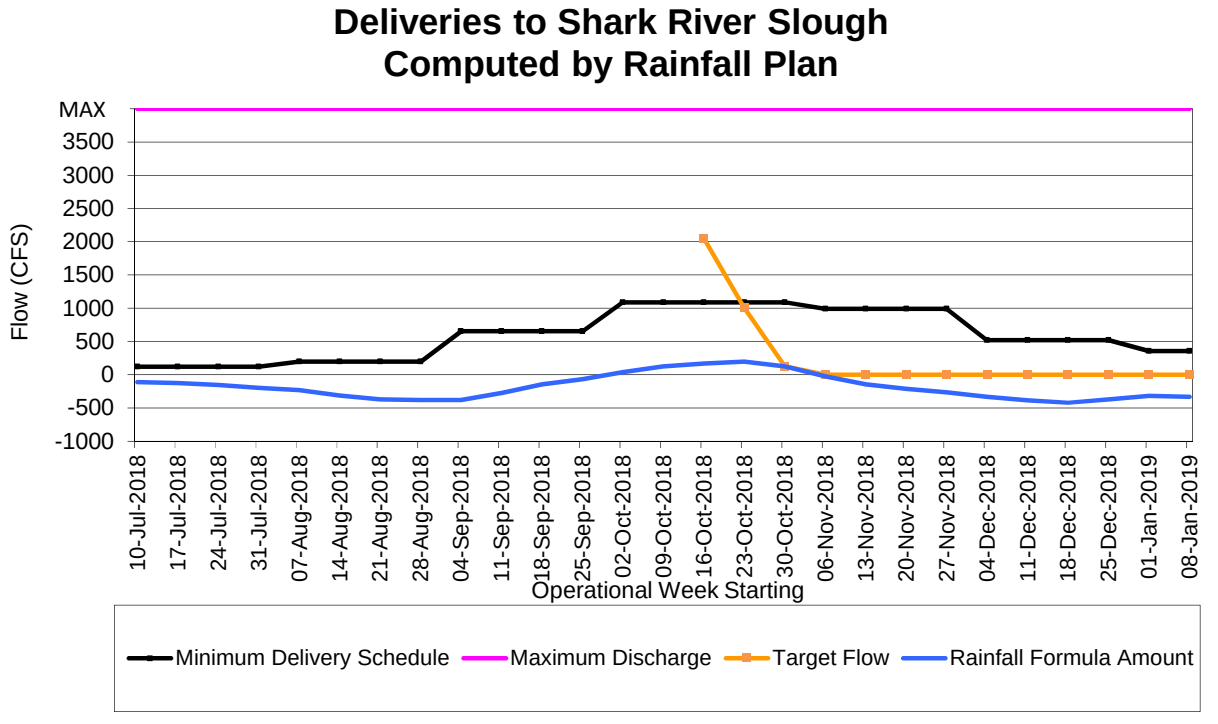
Rainfall Excess Terms

RL1 -0.68 RL2 -0.22 RL3 -1.90

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
06-Jul-2018
13-Jul-2018
20-Jul-2018
27-Jul-2018
03-Aug-2018
10-Aug-2018
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
10-Jul-2018
17-Jul-2018
24-Jul-2018
31-Jul-2018
07-Aug-2018
14-Aug-2018
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow January 15, 2019 to January 21, 2019 0 cfs

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	0 cfs
☑Regulatory Discharge	0 cfs
☐Potential Regulatory Discharge	0 cfs

-----Data Summary -----	**January 5, 2019**	**to**	**January 11, 2019**
WCA-3A Stage (end of week)	9.30		ft-NGVD
Angel's	5.04		ft-NGVD
G-3273	5.88		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.04	0.99
S-140		0.90
ENP		M
This Week's Avg	0.04	0.94
Pre-Project Avg	0.25	0.77

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Regulatory discharge is	0	cfs
Distance to Bottom of Current Zone	N/A	feet
Distance to Top of Current Zone	0.64	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

	Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1	16.11	17.02	0	
WCA-2A	11.81	11.32	30,220	
Others			0	
Total Storage Adjustment			30,220	0.07
WCA-3A	9.30			
Adjusted WCA-3A	**9.37**			

Adjusted WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Potential regulatory discharge	0	cfs
Distance to Bottom of Current Zone	-0.08	feet
Distance to Top of Current Zone	0.56	feet

-----Statistical Parameters -----

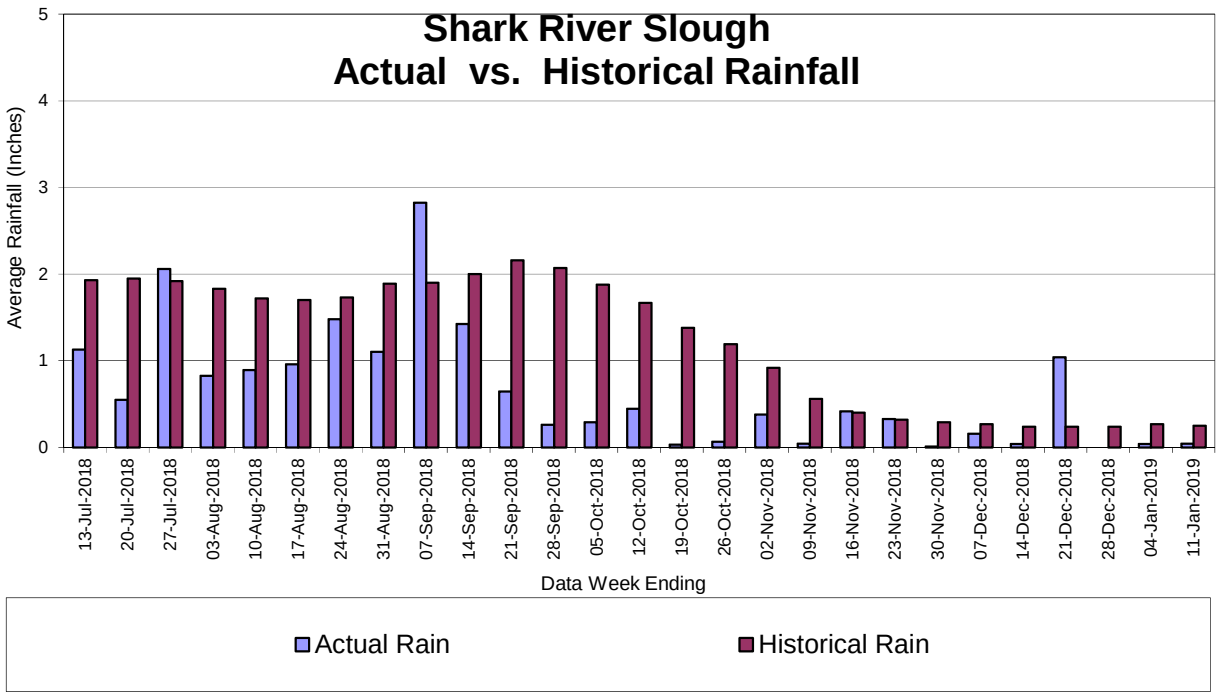
Rainfall Formula Amount	-346	cfs
Last Week's Rainfall Formula	-333	cfs
Pre-project Mean Discharge	216	cfs

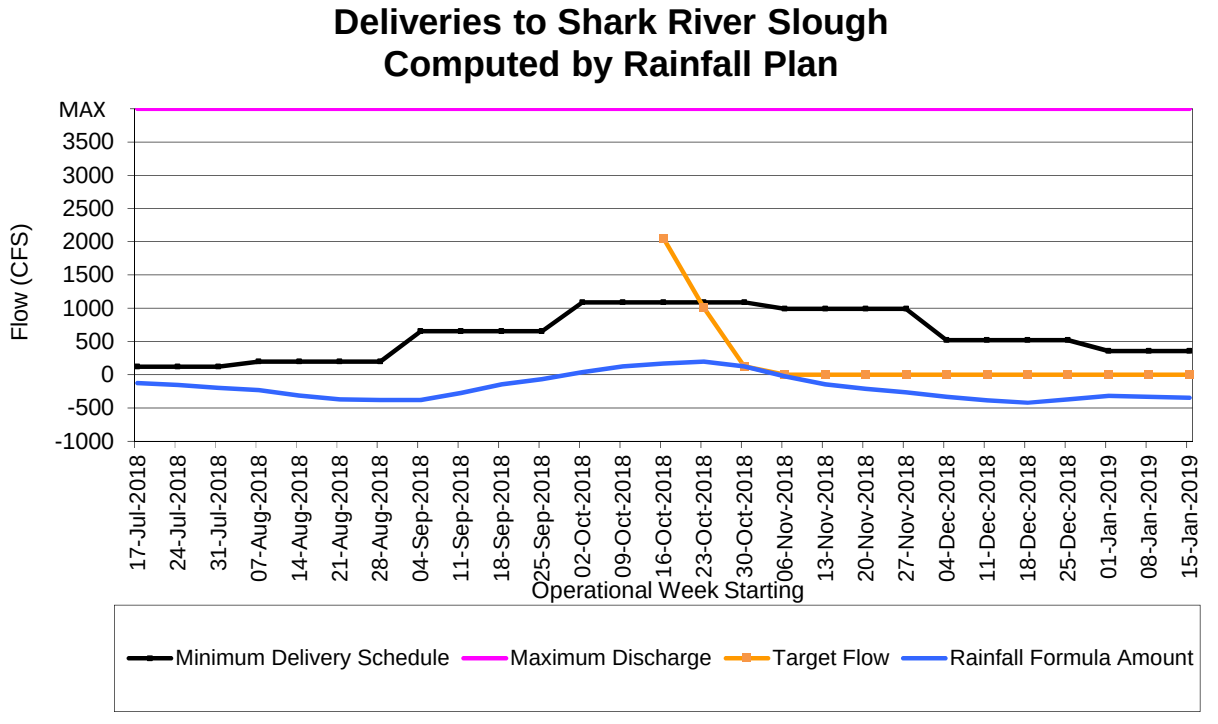
Rainfall Excess Terms

RL1 -0.70 RL2 -0.14 RL3 -1.51

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
13-Jul-2018
20-Jul-2018
27-Jul-2018
03-Aug-2018
10-Aug-2018
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
17-Jul-2018
24-Jul-2018
31-Jul-2018
07-Aug-2018
14-Aug-2018
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow January 22, 2019 to January 28, 2019 0 cfs

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	0 cfs
☑Regulatory Discharge	0 cfs
☐Potential Regulatory Discharge	0 cfs

-----Data Summary -----	**January 12, 2019**	**to**	**January 18, 2019**
WCA-3A Stage (end of week)	9.22		ft-NGVD
Angel's	4.89		ft-NGVD
G-3273	5.66		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.00	0.97
S-140		0.85
ENP		M
This Week's Avg	0.00	0.91
Pre-Project Avg	0.35	0.81

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Regulatory discharge is	0	cfs
Distance to Bottom of Current Zone	N/A	feet
Distance to Top of Current Zone	0.67	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

	Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1	16.04	16.97	0	
WCA-2A	11.72	11.21	27,480	
Others			0	
Total Storage Adjustment			27,480	0.08
WCA-3A	9.22			
Adjusted WCA-3A	**9.30**			

Adjusted WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Potential regulatory discharge	0	cfs
Distance to Bottom of Current Zone	-0.08	feet
Distance to Top of Current Zone	0.59	feet

-----Statistical Parameters -----

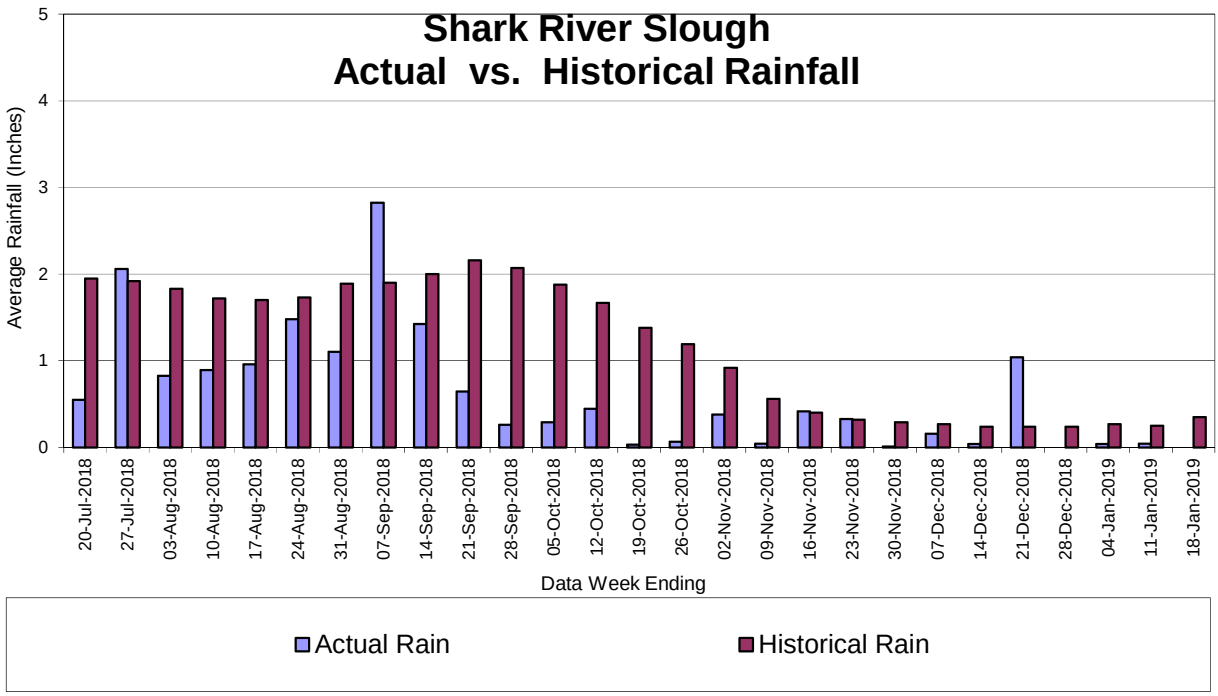
Rainfall Formula Amount	-364	cfs
Last Week's Rainfall Formula	-346	cfs
Pre-project Mean Discharge	186	cfs

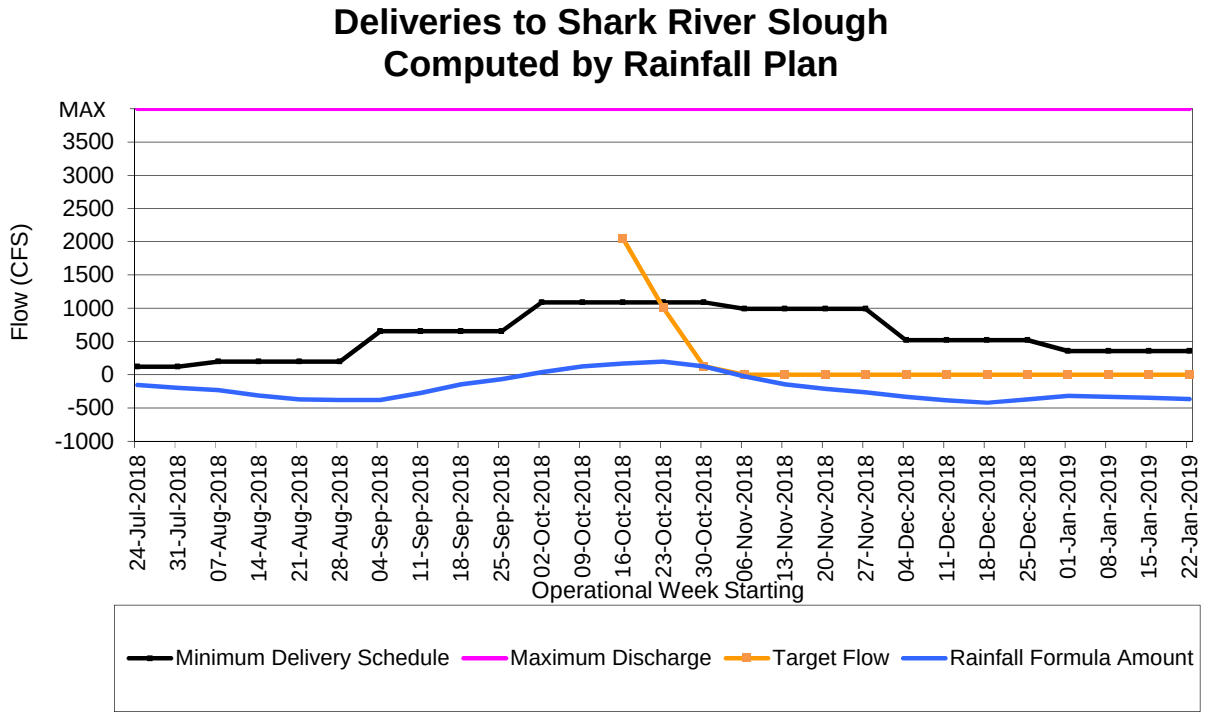
Rainfall Excess Terms

RL1 -0.77 RL2 -0.23 RL3 -1.08

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
20-Jul-2018
27-Jul-2018
03-Aug-2018
10-Aug-2018
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
24-Jul-2018
31-Jul-2018
07-Aug-2018
14-Aug-2018
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow January 29, 2019 to February 4, 2019 0 cfs

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount 0 cfs
☑Regulatory Discharge 0 cfs
☐Potential Regulatory Discharge 0 cfs

-----Data Summary -----	**January 19, 2019**	**to**	**January 25, 2019**
WCA-3A Stage (end of week)	9.23		ft-NGVD
Angel's	5.09		ft-NGVD
G-3273	5.68		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.92	1.03
S-140		0.85
ENP		M
This Week's Avg	0.92	0.94
Pre-Project Avg	0.33	0.83

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Regulatory discharge is 0 cfs
Distance to Bottom of Current Zone N/A feet
Distance to Top of Current Zone 0.62 feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.02	16.90	0	
WCA-2A		11.68	11.10	30,310	
Others				0	
Total Storage Adjustment				30,310	0.09
WCA-3A	9.23				
Adjusted WCA-3A	**9.32**				

Adjusted WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Potential regulatory discharge 0 cfs
Distance to Bottom of Current Zone -0.08 feet
Distance to Top of Current Zone 0.53 feet

-----Statistical Parameters -----

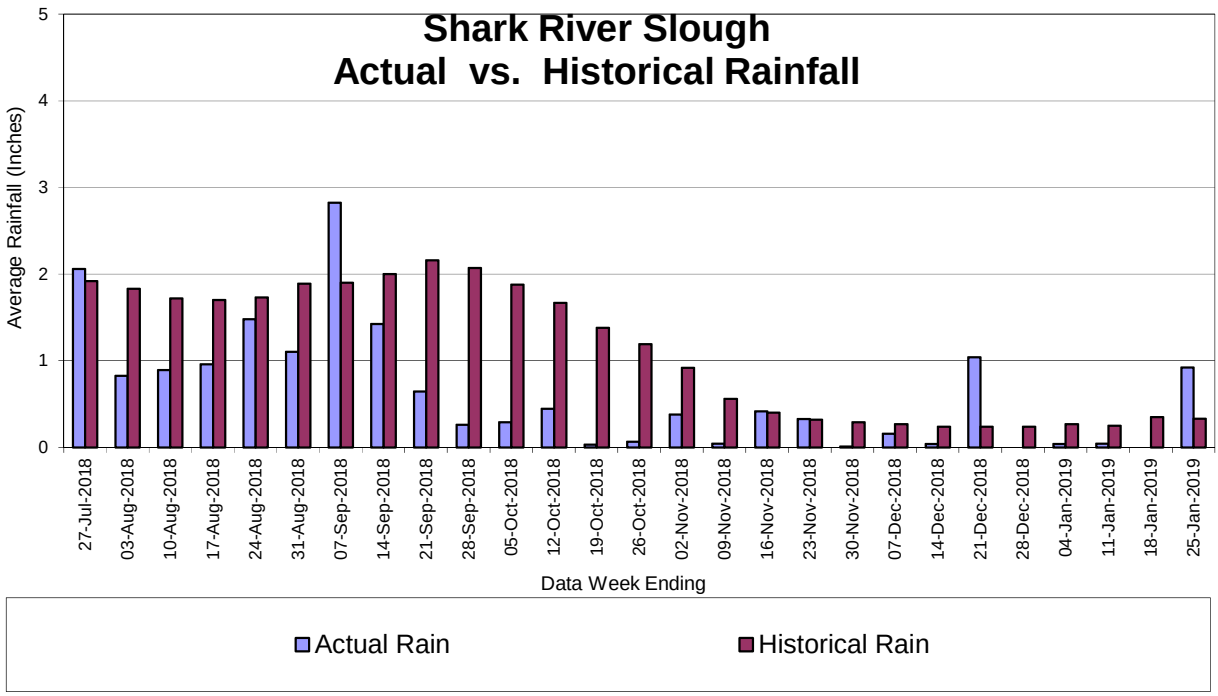
Rainfall Formula Amount -341 cfs
Last Week's Rainfall Formula -364 cfs
Pre-project Mean Discharge 153 cfs

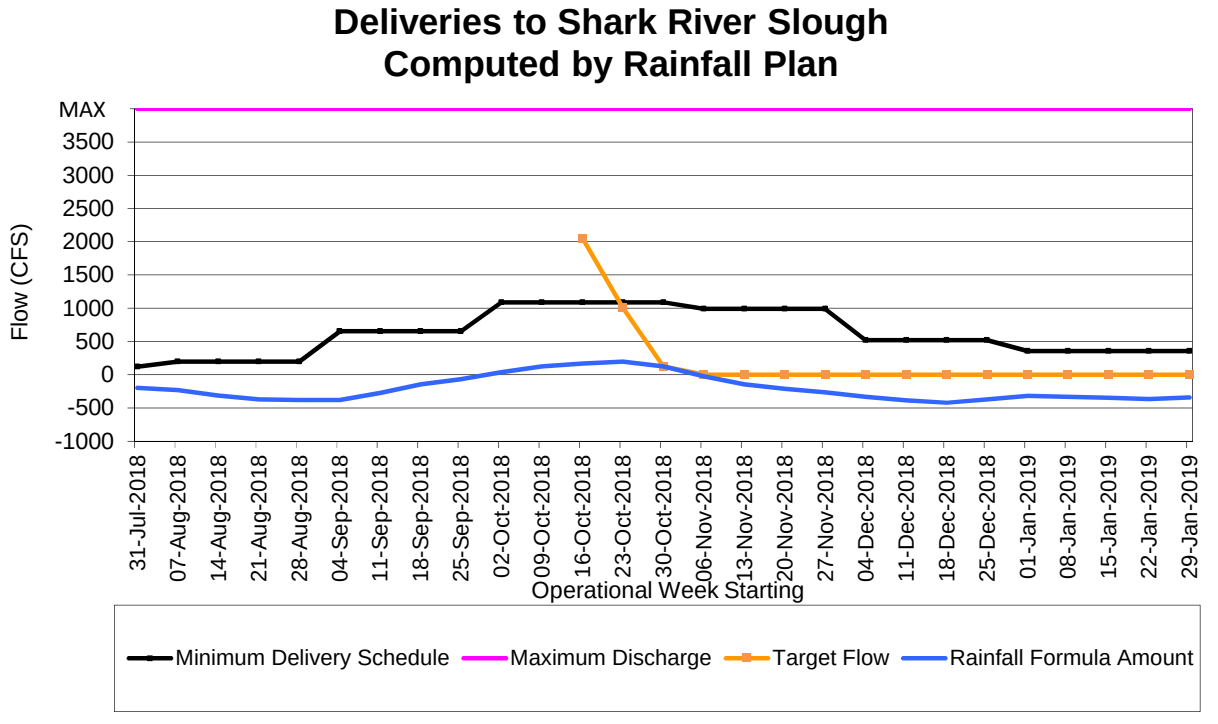
Rainfall Excess Terms

RL1 0.08 RL2 -0.32 RL3 -1.12

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
27-Jul-2018
03-Aug-2018
10-Aug-2018
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
31-Jul-2018
07-Aug-2018
14-Aug-2018
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow February 5, 2019 **to** **February 11, 2019** **0 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	0 cfs
☑Regulatory Discharge	0 cfs
☐Potential Regulatory Discharge	0 cfs

-----Data Summary -----	**January 26, 2019**	**to**	**February 1, 2019**
WCA-3A Stage (end of week)	9.55		ft-NGVD
Angel's	5.34		ft-NGVD
G-3273	5.99		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	3.80	0.90
S-140		1.00
ENP		M
This Week's Avg	3.80	0.95
Pre-Project Avg	0.35	0.88

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		0	cfs
Distance to Bottom of Current Zone		N/A	feet
Distance to Top of Current Zone		0.25	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.47	16.82	0	
WCA-2A		12.12	11.00	67,200	
Others				0	
Total Storage Adjustment				67,200	0.15
WCA-3A	9.55				
Adjusted WCA-3A	**9.70**				

Adjusted WCA-3A is in Zone	**E**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		0	cfs
Distance to Bottom of Current Zone		-0.08	feet
Distance to Top of Current Zone		0.10	feet

-----Statistical Parameters -----

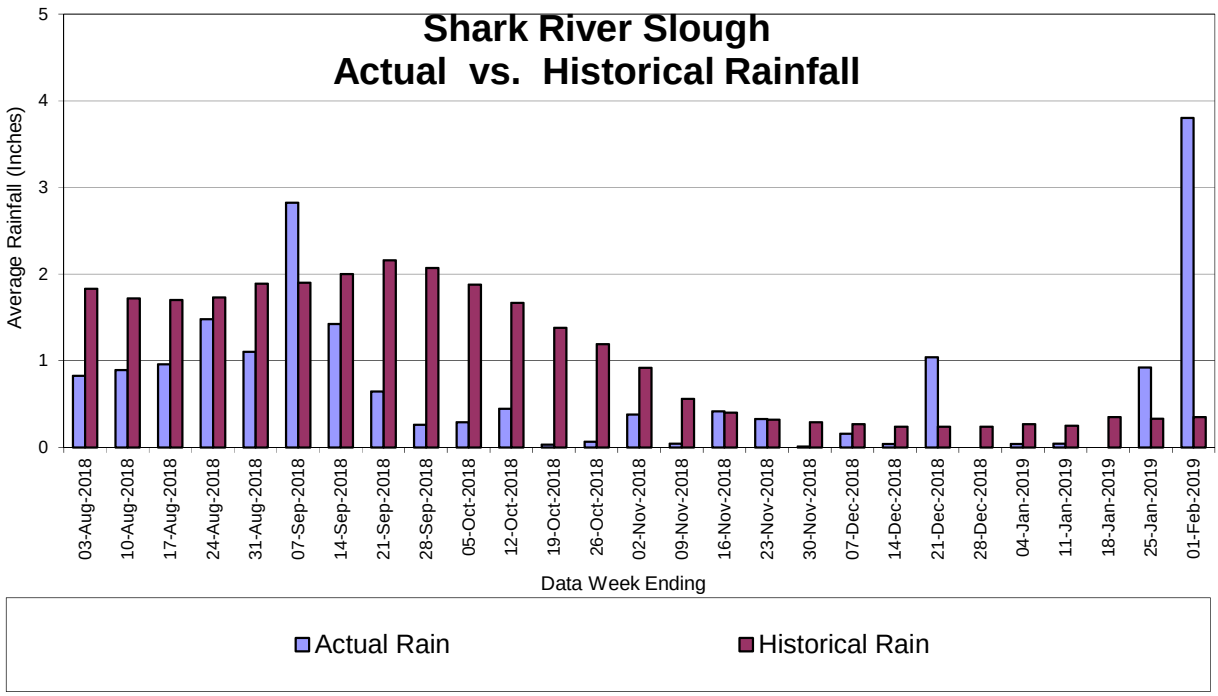
Rainfall Formula Amount	-42 cfs
Last Week's Rainfall Formula	-341 cfs
Pre-project Mean Discharge	130 cfs

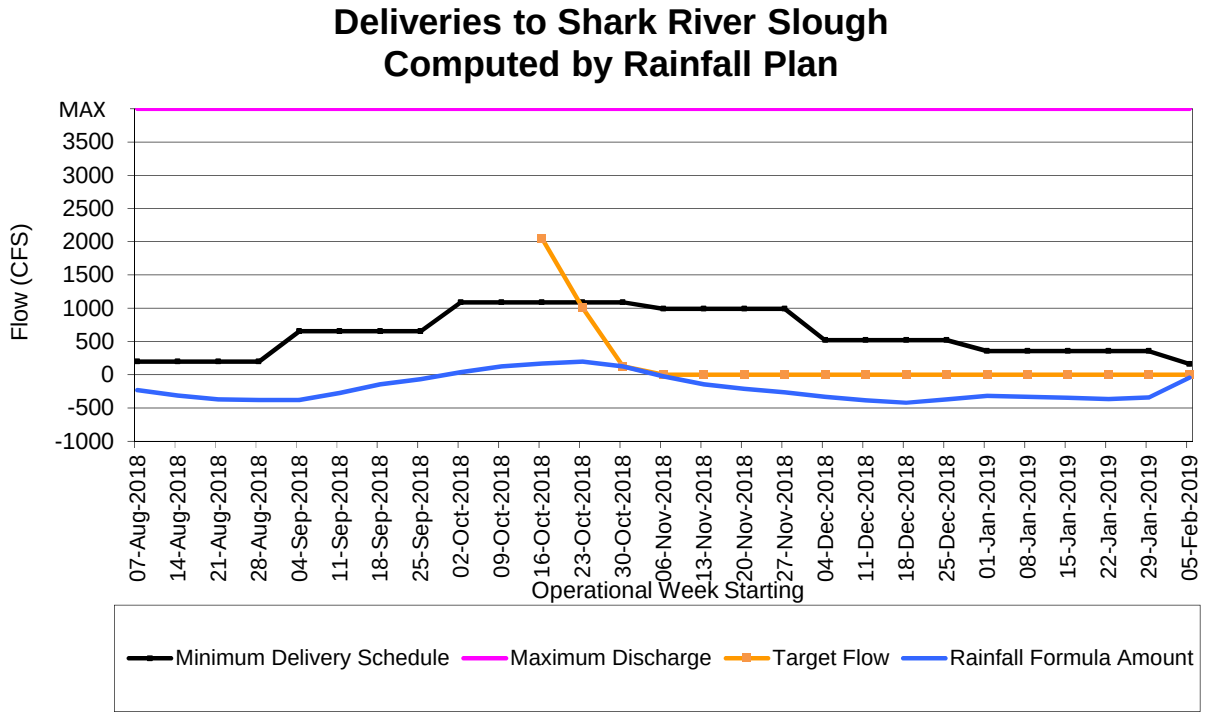
Rainfall Excess Terms

RL1 3.90 RL2 -1.46 RL3 -0.22

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
03-Aug-2018
10-Aug-2018
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
07-Aug-2018
14-Aug-2018
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

				Adjusted
Target Flow	**February 12, 2019**	**to**	**February 18, 2019**	**347 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	181 cfs
☐Regulatory Discharge	0 cfs
☑Potential Regulatory Discharge	166 cfs

-----Data Summary -----	**February 2, 2019**	**to**	**February 8, 2019**
WCA-3A Stage (end of week)	9.58		ft-NGVD
Angel's	5.06		ft-NGVD
G-3273	5.74		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.23	0.90
S-140		1.13
ENP		M
This Week's Avg	0.23	1.01
Pre-Project Avg	0.35	0.94

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		0	cfs
Distance to Bottom of Current Zone		N/A	feet
Distance to Top of Current Zone		0.18	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.58	16.75	0	
WCA-2A		12.58	11.00	109,300	
Others				0	
Total Storage Adjustment				109,300	0.24
WCA-3A	9.58				
Adjusted WCA-3A	**9.82**				

Adjusted WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		166	cfs
Distance to Bottom of Current Zone		-0.07	feet
Distance to Top of Current Zone		0.42	feet

-----Statistical Parameters -----

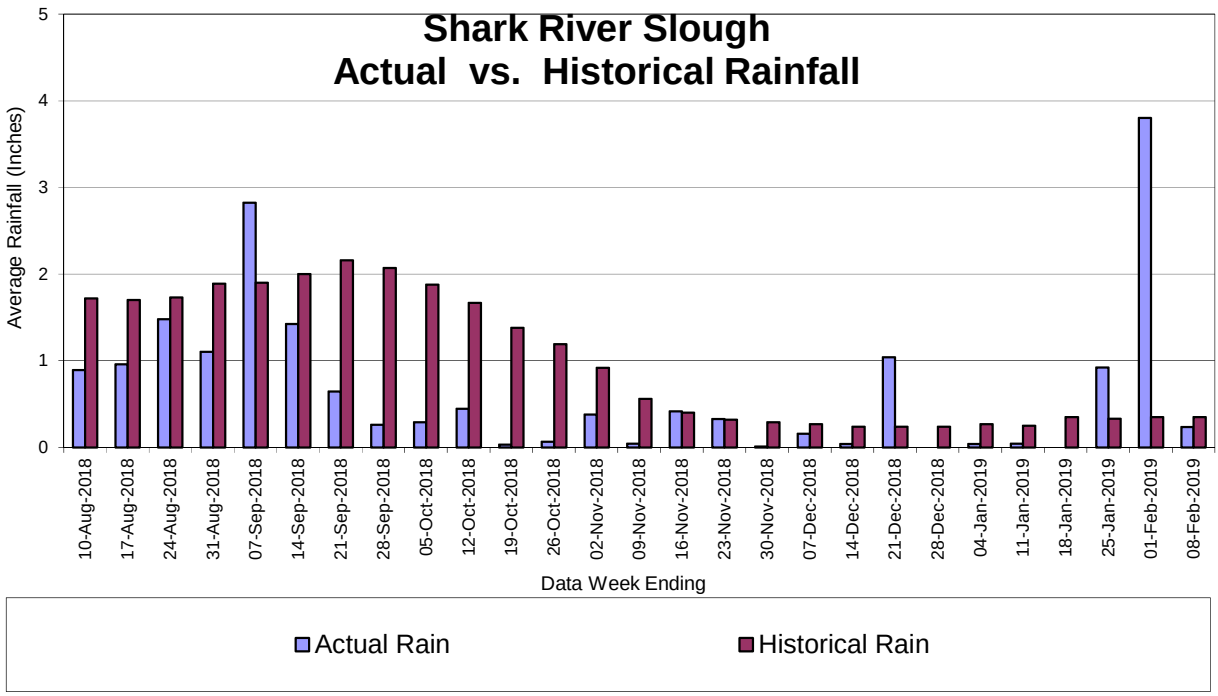
Rainfall Formula Amount	181 cfs
Last Week's Rainfall Formula	-42 cfs
Pre-project Mean Discharge	110 cfs

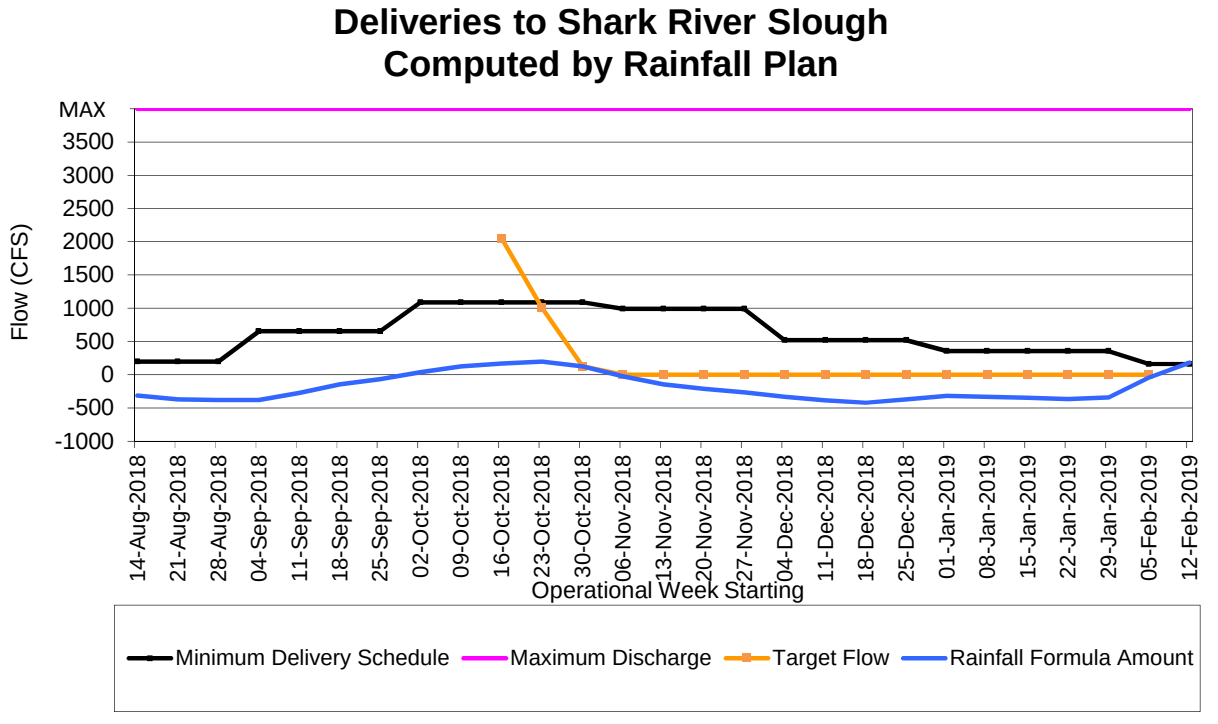
Rainfall Excess Terms

RL1 3.22 RL2 -0.62 RL3 -0.14

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
10-Aug-2018
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
08-Feb-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
14-Aug-2018
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
12-Feb-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

				Adjusted
Target Flow	**February 19, 2019**	**to**	**February 25, 2019**	**880 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	235 cfs
☐Regulatory Discharge	117 cfs
☑Potential Regulatory Discharge	645 cfs

-----Data Summary -----	**February 9, 2019**	**to**	**February 15, 2019**
WCA-3A Stage (end of week)	9.76		ft-NGVD
Angel's	5.39		ft-NGVD
G-3273	6.03		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	1.39	1.05
S-140		1.25
ENP		M
This Week's Avg	1.39	1.15
Pre-Project Avg	0.35	1.01

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		117	cfs
Distance to Bottom of Current Zone		-0.05	feet
Distance to Top of Current Zone		0.43	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.61	16.67	0	
WCA-2A		12.45	11.00	94,500	
Others				0	
Total Storage Adjustment				94,500	0.21
WCA-3A	9.76				
Adjusted WCA-3A	**9.97**				

Adjusted WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		645	cfs
Distance to Bottom of Current Zone		-0.26	feet
Distance to Top of Current Zone		0.22	feet

-----Statistical Parameters -----

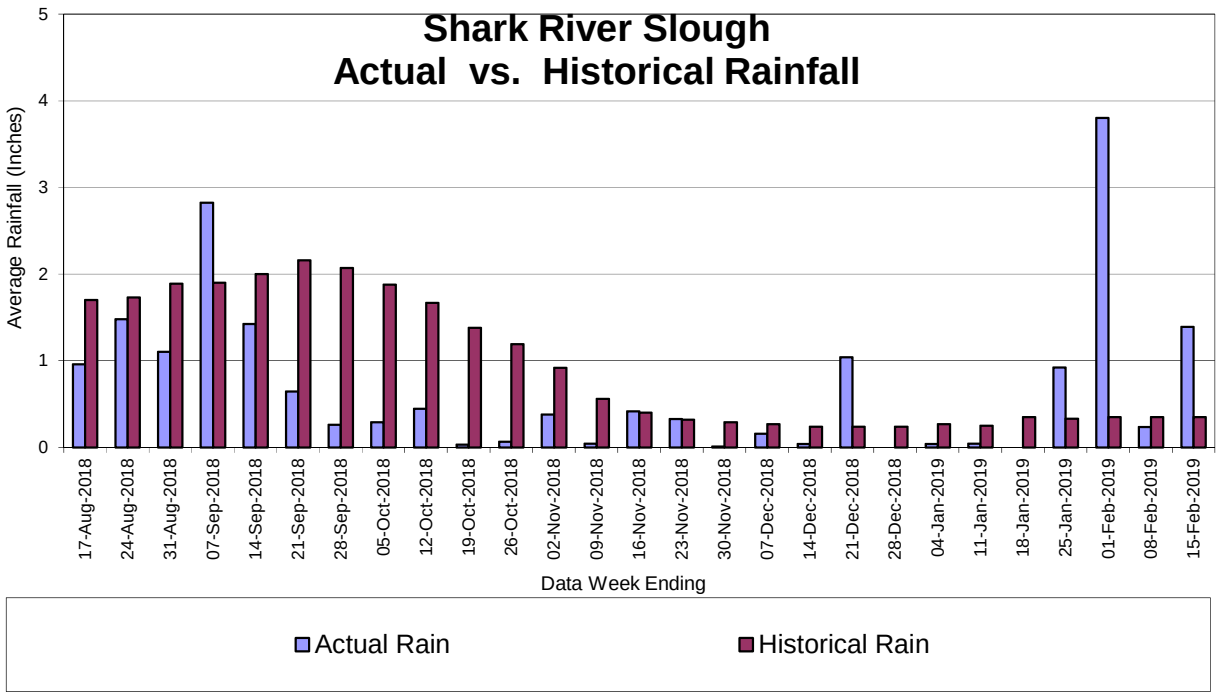
Rainfall Formula Amount	235 cfs
Last Week's Rainfall Formula	181 cfs
Pre-project Mean Discharge	88 cfs

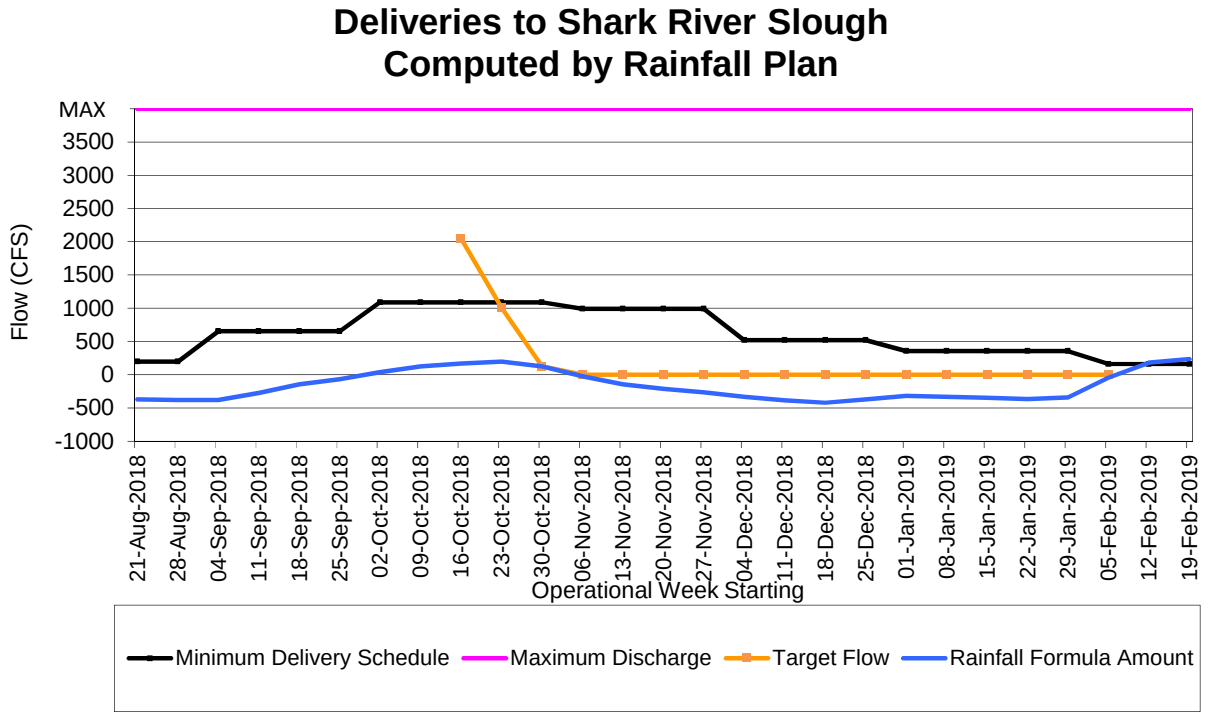
Rainfall Excess Terms

RL1 0.75 RL2 3.13 RL3 -0.23

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
17-Aug-2018
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
08-Feb-2019
15-Feb-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
21-Aug-2018
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
12-Feb-2019
19-Feb-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

				Adjusted
Target Flow	**February 26, 2019**	**to**	**March 4, 2019**	**966 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	264 cfs
☐Regulatory Discharge	254 cfs
☑Potential Regulatory Discharge	702 cfs

-----Data Summary -----	**February 16, 2019**	**to**	**February 22, 2019**
WCA-3A Stage (end of week)	9.77		ft-NGVD
Angel's	5.06		ft-NGVD
G-3273	5.72		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.05	1.25
S-140		1.33
ENP		M
This Week's Avg	0.05	1.29
Pre-Project Avg	0.38	1.08

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		254	cfs
Distance to Bottom of Current Zone		-0.10	feet
Distance to Top of Current Zone		0.38	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.51	16.60	0	
WCA-2A		12.26	11.00	80,250	
Others				0	
Total Storage Adjustment				80,250	0.18
WCA-3A	9.77				
Adjusted WCA-3A	**9.95**				

Adjusted WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		702	cfs
Distance to Bottom of Current Zone		-0.28	feet
Distance to Top of Current Zone		0.20	feet

-----Statistical Parameters -----

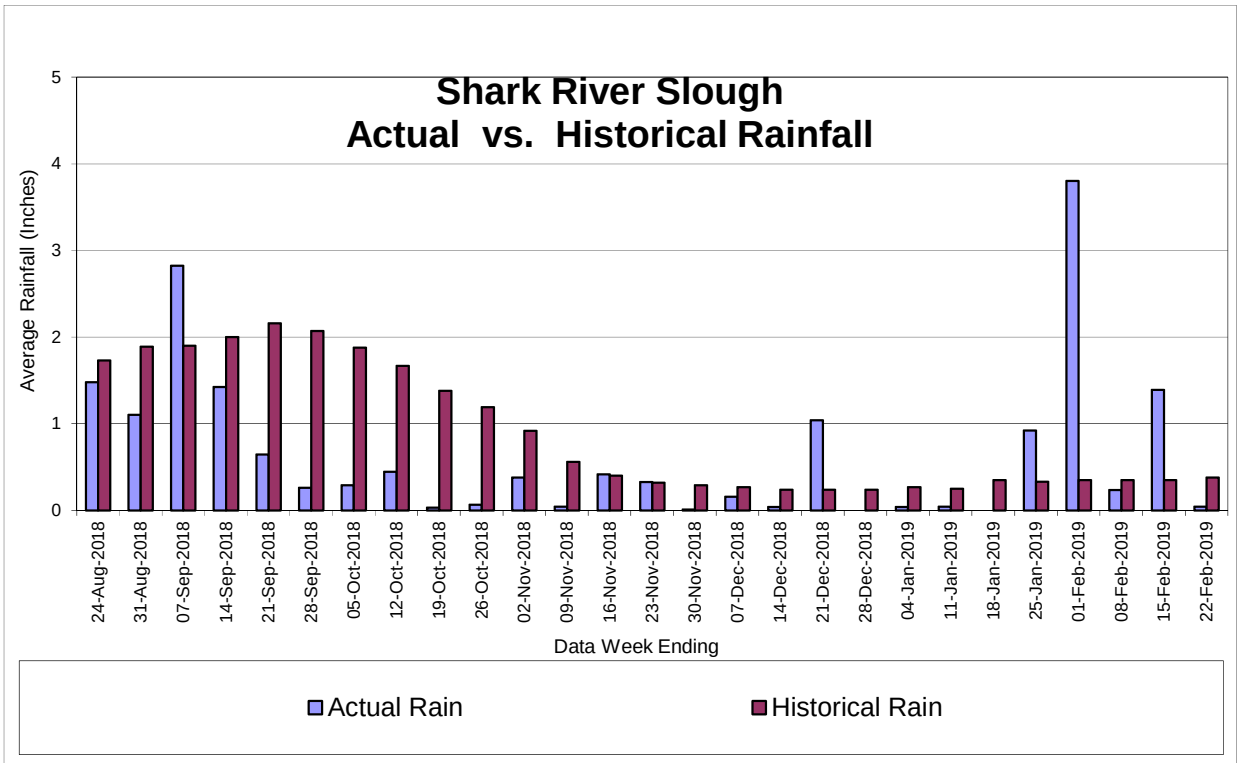
Rainfall Formula Amount		264	cfs
Last Week's Rainfall Formula		235	cfs
Pre-project Mean Discharge		69	cfs

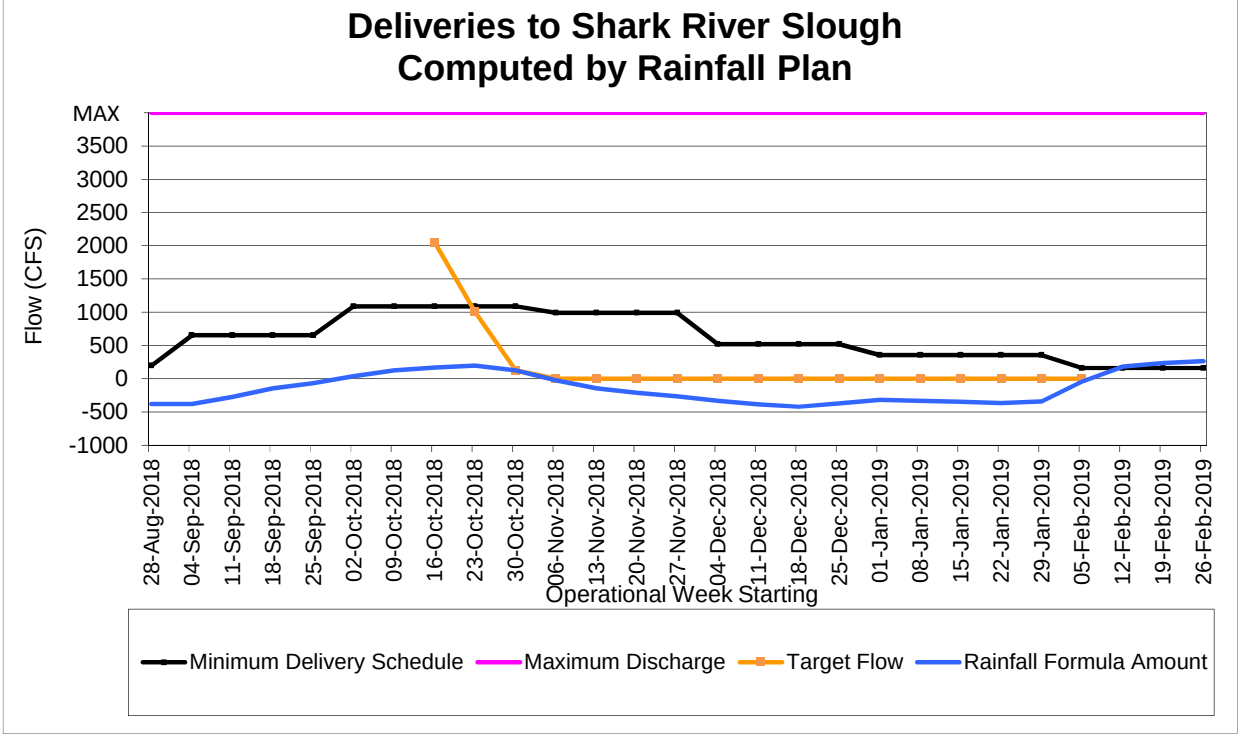
Rainfall Excess Terms

RL1 0.42 RL2 3.30 RL3 -0.32

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
24-Aug-2018
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
08-Feb-2019
15-Feb-2019
22-Feb-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
28-Aug-2018
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
12-Feb-2019
19-Feb-2019
26-Feb-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

				Adjusted
Target Flow	**March 5, 2019**	**to**	**March 11, 2019**	**995 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	229 cfs
☐Regulatory Discharge	241 cfs
☑Potential Regulatory Discharge	767 cfs

-----Data Summary -----	**February 23, 2019**	**to**	**March 1, 2019**
WCA-3A Stage (end of week)	9.72		ft-NGVD
Angel's	5.12		ft-NGVD
G-3273	5.74		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.32	1.51
S-140		1.40
ENP		M
This Week's Avg	0.32	1.45
Pre-Project Avg	0.40	1.15

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		241	cfs
Distance to Bottom of Current Zone		-0.10	feet
Distance to Top of Current Zone		0.38	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.64	16.52	14,000	
WCA-2A		12.26	11.00	80,250	
Others				0	
Total Storage Adjustment				94,250	0.21
WCA-3A	9.72				
Adjusted WCA-3A	**9.93**				

Adjusted WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		767	cfs
Distance to Bottom of Current Zone		-0.31	feet
Distance to Top of Current Zone		0.17	feet

-----Statistical Parameters -----

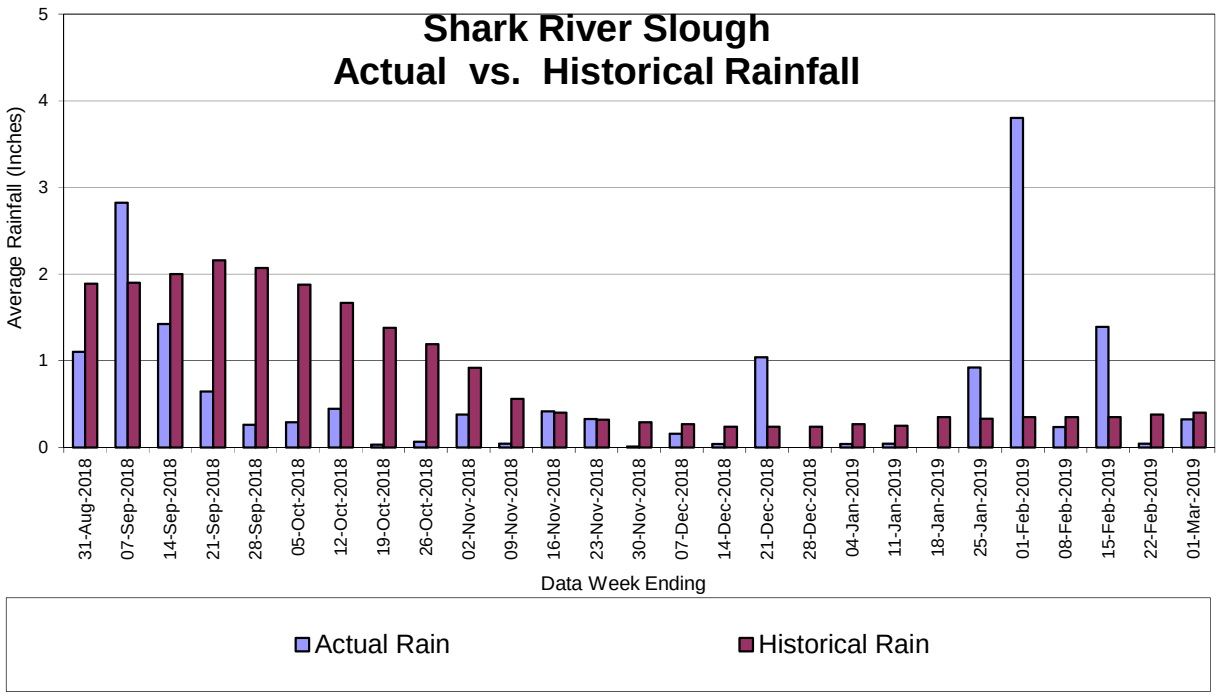
Rainfall Formula Amount		229	cfs
Last Week's Rainfall Formula		264	cfs
Pre-project Mean Discharge		50	cfs

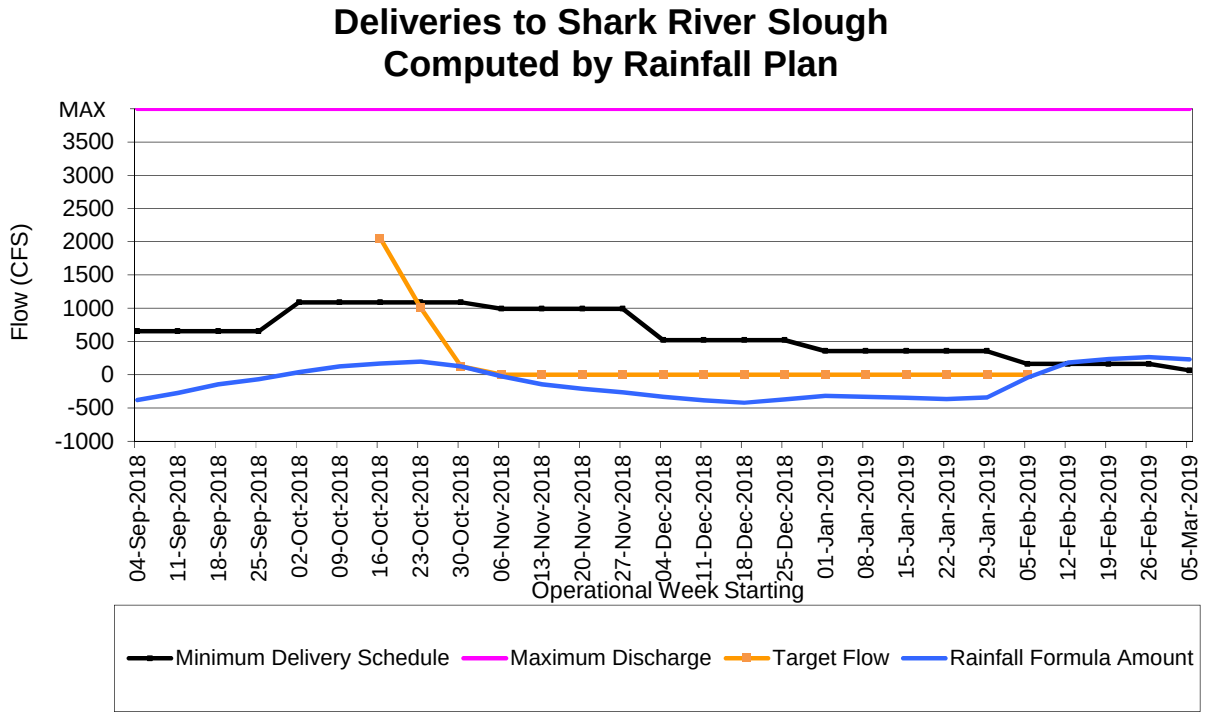
Rainfall Excess Terms

RL1 -0.82 RL2 4.65 RL3 -1.46

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
31-Aug-2018
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
08-Feb-2019
15-Feb-2019
22-Feb-2019
01-Mar-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
04-Sep-2018
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
12-Feb-2019
19-Feb-2019
26-Feb-2019
05-Mar-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow **March 12, 2019** **to** **March 18, 2019** **268 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	191 cfs
☑Regulatory Discharge	77 cfs
☐Potential Regulatory Discharge	527 cfs

-----Data Summary -----	**March 2, 2019**	**to**	**March 8, 2019**
WCA-3A Stage (end of week)	9.61		ft-NGVD
Angel's	4.95		ft-NGVD
G-3273	5.42		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.12	1.50
S-140		1.54
ENP		M
This Week's Avg	0.12	1.52
Pre-Project Avg	0.33	1.22

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Regulatory discharge is		77	cfs
Distance to Bottom of Current Zone		-0.03	feet
Distance to Top of Current Zone		0.44	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.53	16.45	13,400	
WCA-2A		12.15	11.00	67,200	
Others				0	
Total Storage Adjustment				80,600	0.18
WCA-3A	9.61				
Adjusted WCA-3A	**9.79**				

Adjusted WCA-3A is in Zone	**E1**	**Discharge Coeff. (cfs/ft) =**	**2500**
Potential regulatory discharge		527	cfs
Distance to Bottom of Current Zone		-0.21	feet
Distance to Top of Current Zone		0.26	feet

-----Statistical Parameters -----

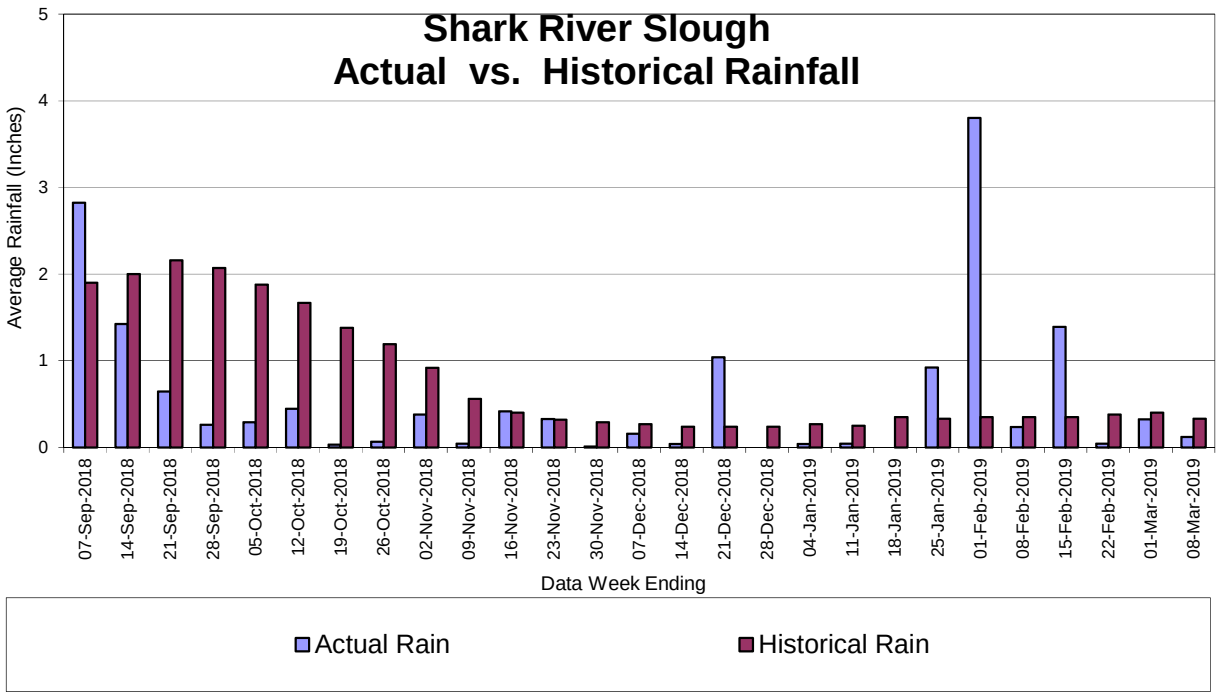
Rainfall Formula Amount	191 cfs
Last Week's Rainfall Formula	229 cfs
Pre-project Mean Discharge	35 cfs

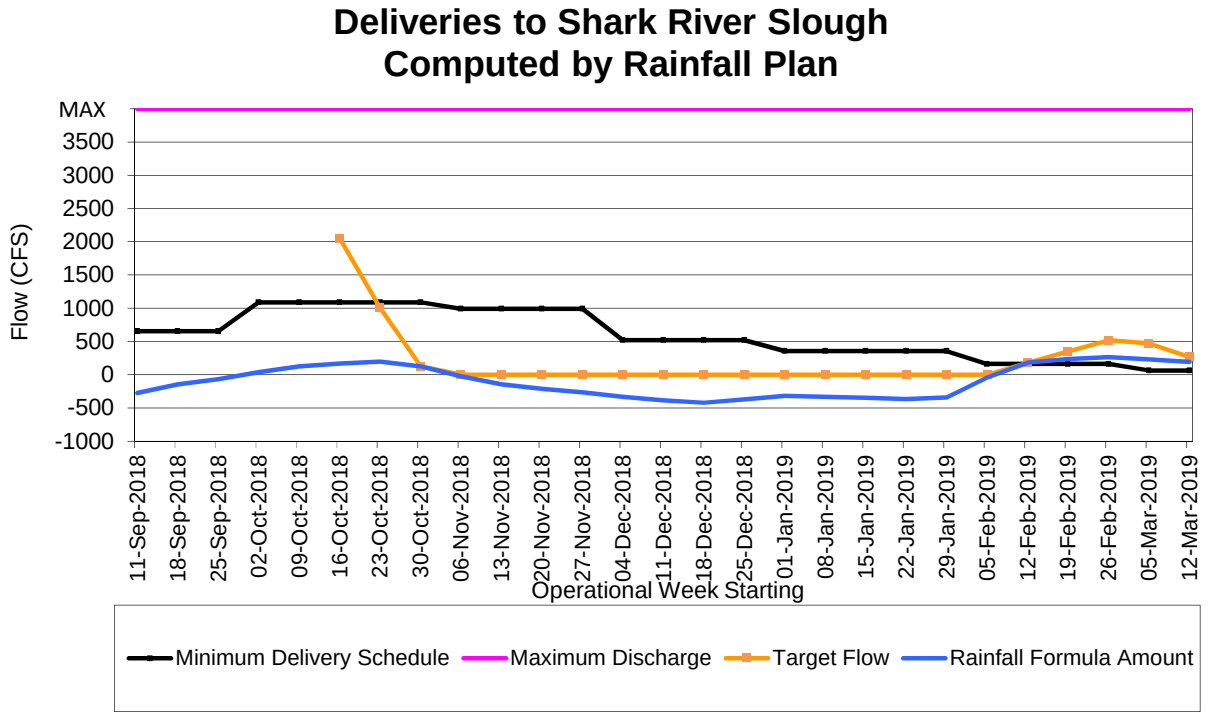
Rainfall Excess Terms

RL1 -0.77 RL2 3.65 RL3 -0.62

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
07-Sep-2018
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
08-Feb-2019
15-Feb-2019
22-Feb-2019
01-Mar-2019
08-Mar-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
11-Sep-2018
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
12-Feb-2019
19-Feb-2019
26-Feb-2019
05-Mar-2019
12-Mar-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount

WCA-3A RAINFALL-BASED MANAGEMENT PLAN

Target Flow **March 19, 2019** **to** **March 25, 2019** **140 cfs**

The target flow is distributed from east to west (S-333, S-12D, S-12C, S-12B, and S-12A) to keep WCA 3A releases away from sub-population A of the Cape Sable seaside sparrow

Rainfall Formula Amount	140 cfs
☑Regulatory Discharge	0 cfs
☐Potential Regulatory Discharge	345 cfs

-----Data Summary -----	**March 9, 2019**	**to**	**March 15, 2019**
WCA-3A Stage (end of week)	9.52		ft-NGVD
Angel's	4.97		ft-NGVD
G-3273	5.38		ft-NGVD

Station	Rainfall (in)	Pan Evaporation (in)
NEXRAD Rain for WCA-3A and S7 evaporation	0.00	1.43
S-140		1.61
ENP		M
This Week's Avg	0.00	1.52
Pre-Project Avg	0.43	1.29

----- Regulatory Discharge Calculation -----

WCA-3A is in Zone E **Discharge Coeff. (cfs/ft) = 2500**

Regulatory discharge is	0	cfs
Distance to Bottom of Current Zone	N/A	feet
Distance to Top of Current Zone	0.01	feet

-----Potential Regulatory Discharge Considering Upstream Water Levels-----

		Stage (ft-NGVD)	Regulation Stage (ft-NGVD)	Excess Storage (ac-ft)	Depth (ft)
WCA-1		16.37	16.37	0	
WCA-2A		12.06	11.00	62,850	
Others				0	
Total Storage Adjustment				62,850	0.15
WCA-3A	9.52				
Adjusted WCA-3A	**9.67**				

Adjusted WCA-3A is in Zone E1 **Discharge Coeff. (cfs/ft) = 2500**

Potential regulatory discharge	345	cfs
Distance to Bottom of Current Zone	-0.14	feet
Distance to Top of Current Zone	0.33	feet

-----Statistical Parameters -----

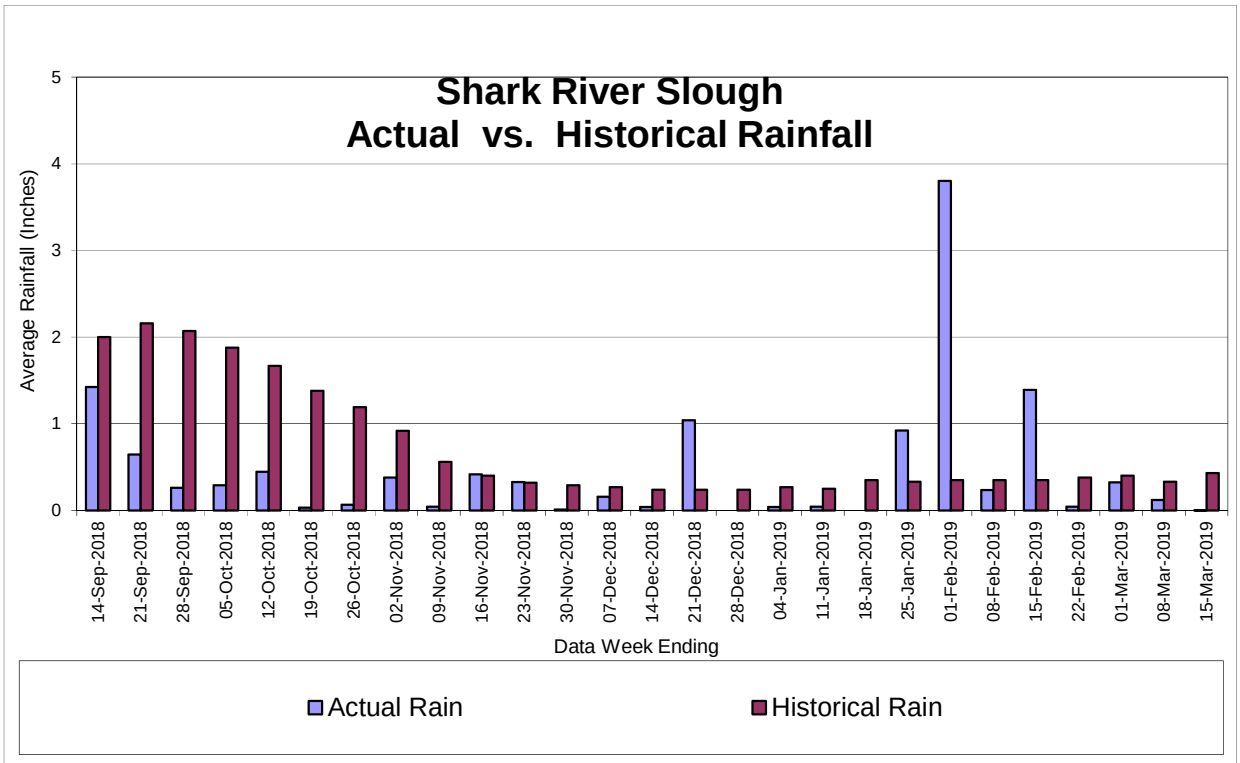
Rainfall Formula Amount	140	cfs
Last Week's Rainfall Formula	191	cfs
Pre-project Mean Discharge	25	cfs

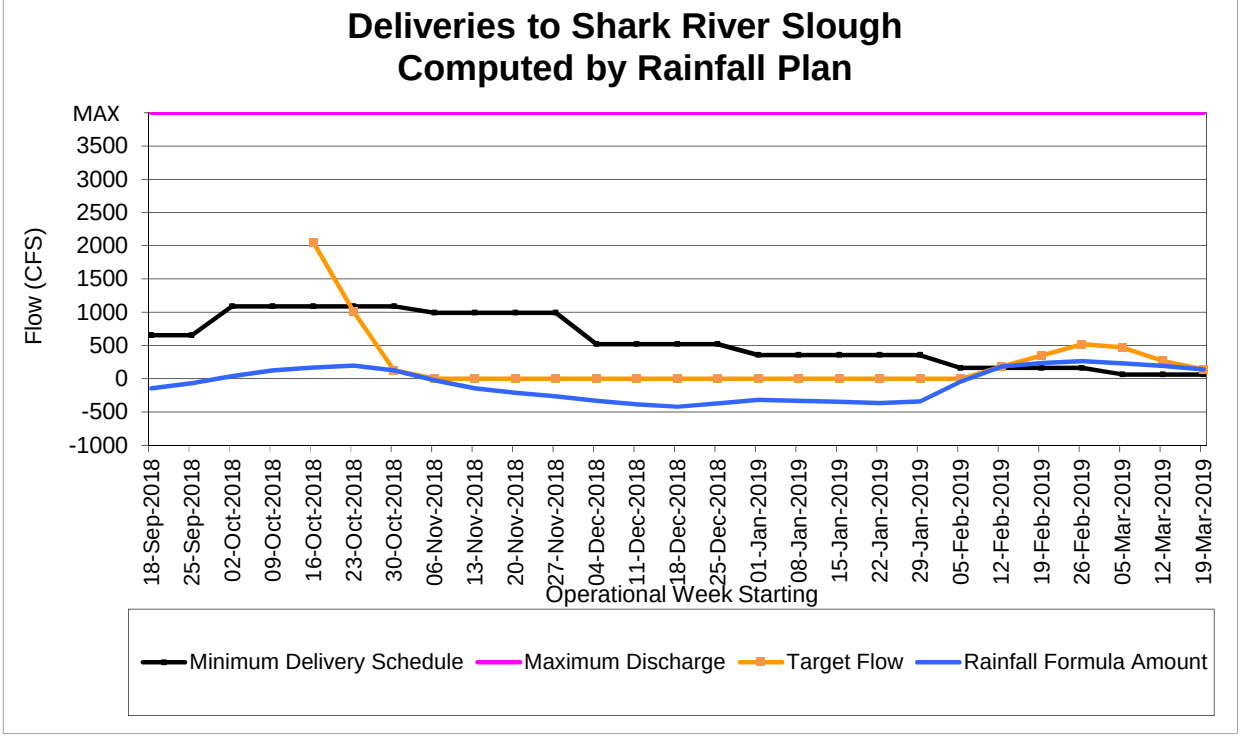
Rainfall Excess Terms

RL1 -1.06 RL2 -0.07 RL3 3.13

COMMENT: S7 estimated evap data and S140 estimated evap data were used. ENP evap data were missing

***NOTE: Actual discharges may vary from target discharges because of changing hydrologic conditions.**


Shark River Slough
Actual vs. Historical Rainfall
Average Rainfall (Inches)
0
1
2
3
4
5
14-Sep-2018
21-Sep-2018
28-Sep-2018
05-Oct-2018
12-Oct-2018
19-Oct-2018
26-Oct-2018
02-Nov-2018
09-Nov-2018
16-Nov-2018
23-Nov-2018
30-Nov-2018
07-Dec-2018
14-Dec-2018
21-Dec-2018
28-Dec-2018
04-Jan-2019
11-Jan-2019
18-Jan-2019
25-Jan-2019
01-Feb-2019
08-Feb-2019
15-Feb-2019
22-Feb-2019
01-Mar-2019
08-Mar-2019
15-Mar-2019
Data Week Ending
Actual Rain
Historical Rain


Deliveries to Shark River Slough
Computed by Rainfall Plan
Flow (CFS)
MAX
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
18-Sep-2018
25-Sep-2018
02-Oct-2018
09-Oct-2018
16-Oct-2018
23-Oct-2018
30-Oct-2018
06-Nov-2018
13-Nov-2018
20-Nov-2018
27-Nov-2018
04-Dec-2018
11-Dec-2018
18-Dec-2018
25-Dec-2018
01-Jan-2019
08-Jan-2019
15-Jan-2019
22-Jan-2019
29-Jan-2019
05-Feb-2019
12-Feb-2019
19-Feb-2019
26-Feb-2019
05-Mar-2019
12-Mar-2019
19-Mar-2019
Operational Week Starting
Minimum Delivery Schedule
Maximum Discharge
Target Flow
Rainfall Formula Amount