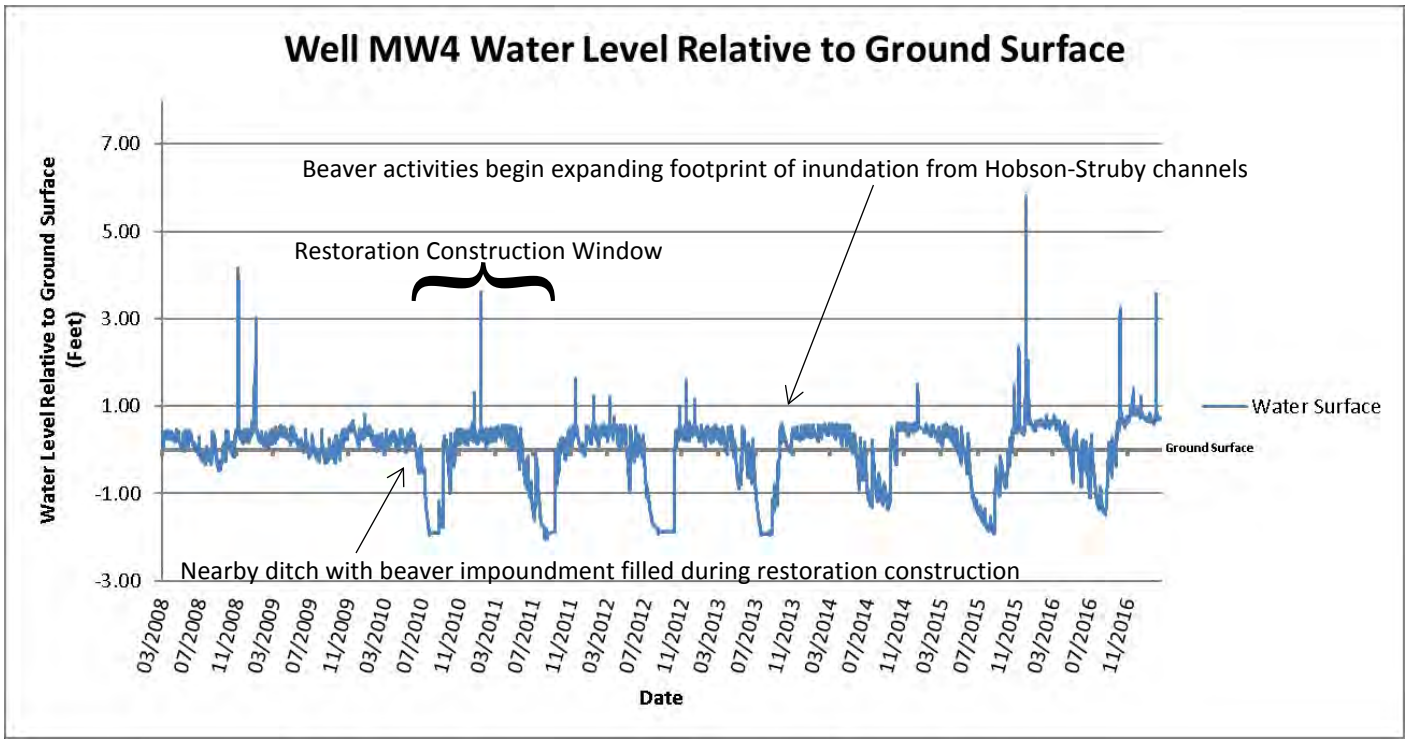
Appendix A

Graphs depicting water levels at Miami Wetlands from March 2008 through February 2017

Figure A1. Water levels relative to ground surface for six groundwater and two in-channel wells at Miami Wetlands from March 2008 through February 2017. Discontinuous lines indicate data gaps.



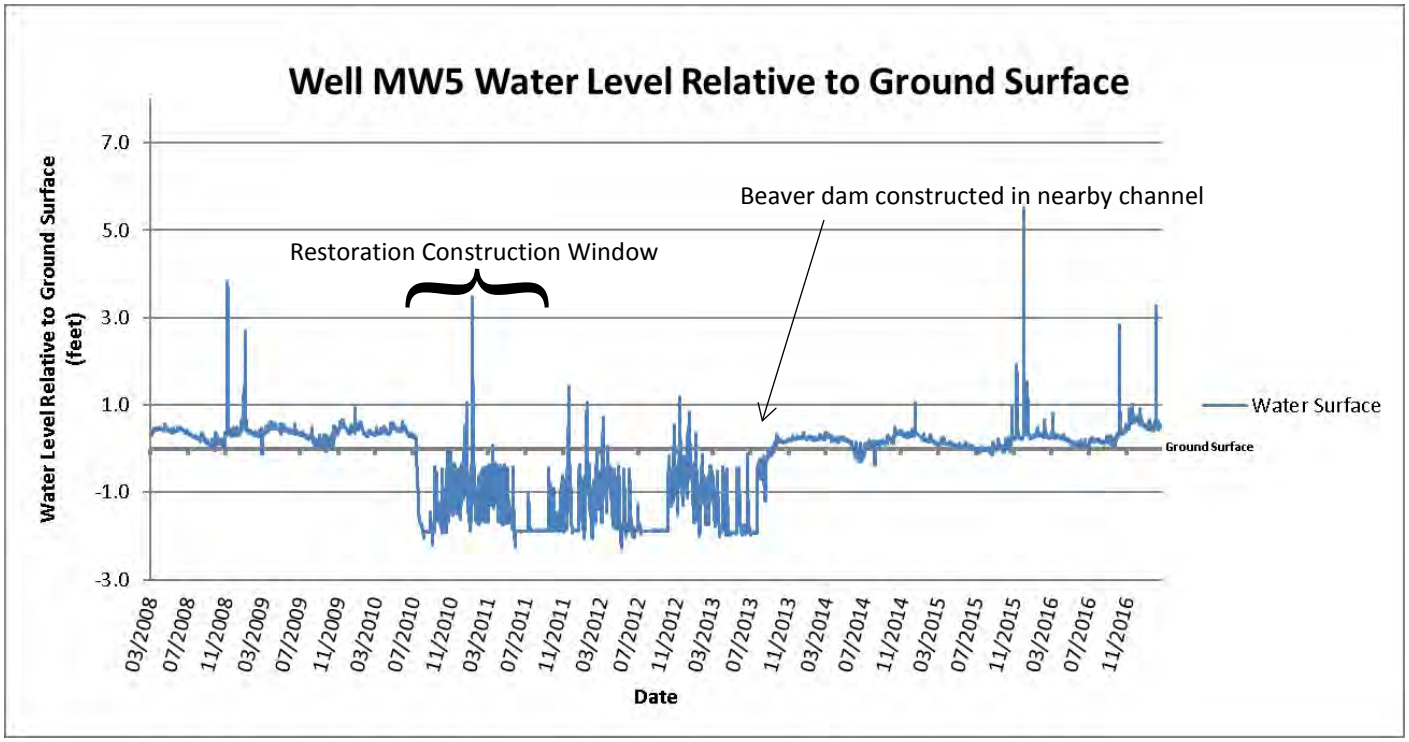
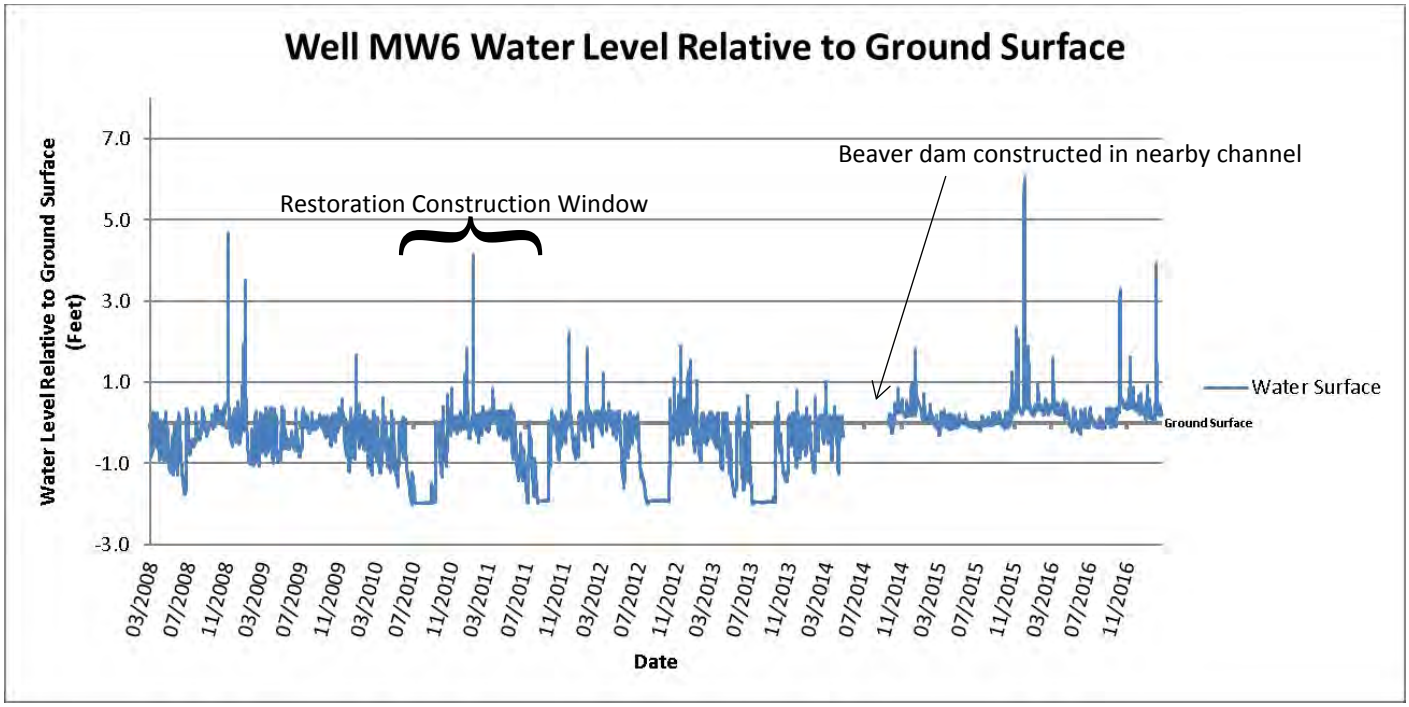


Figure A1. continued



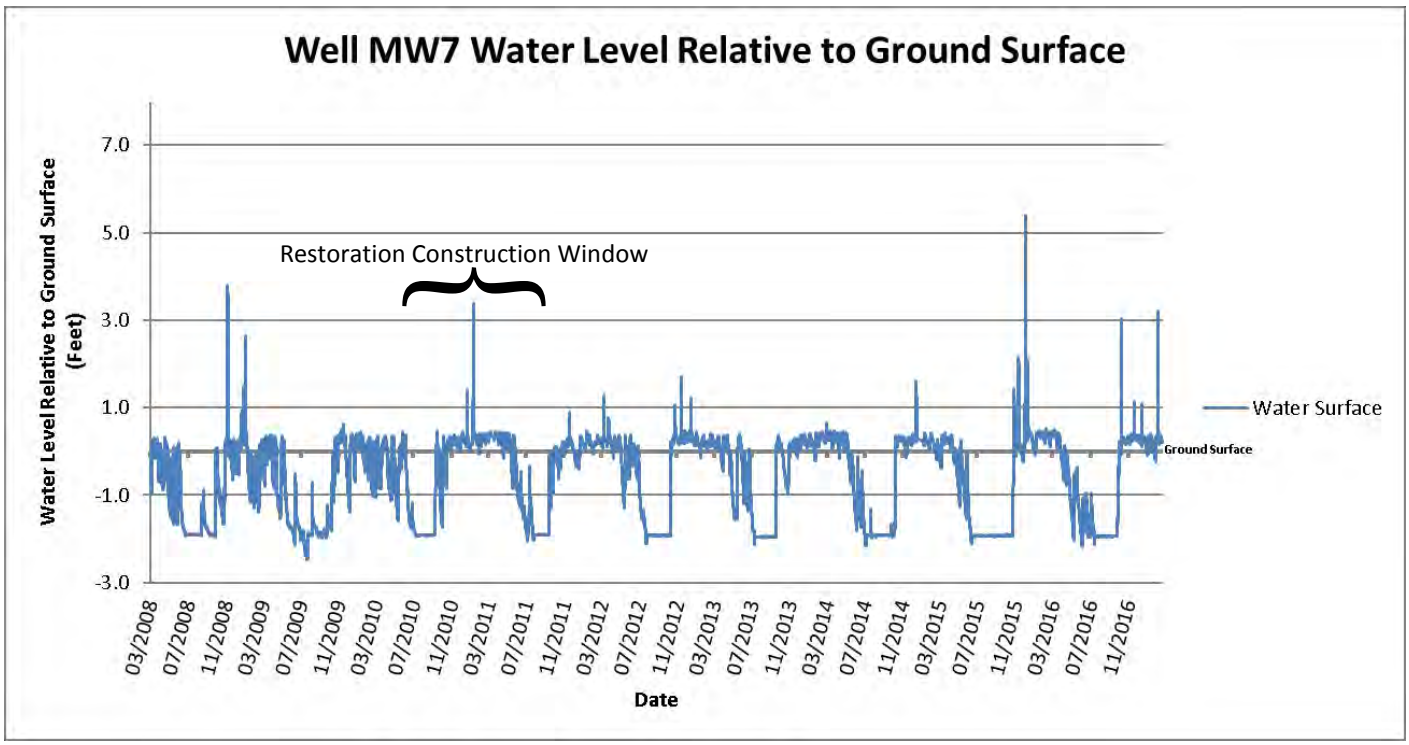
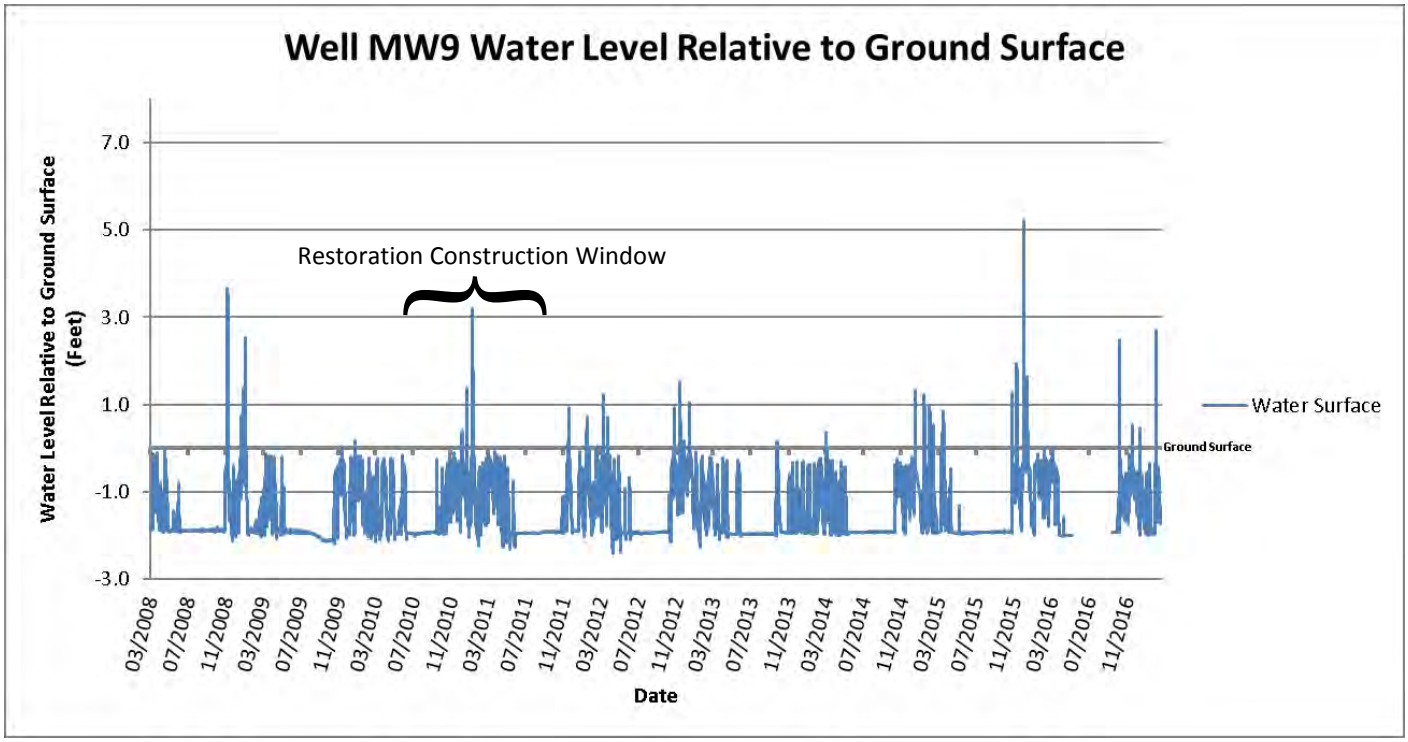


Figure A1. continued



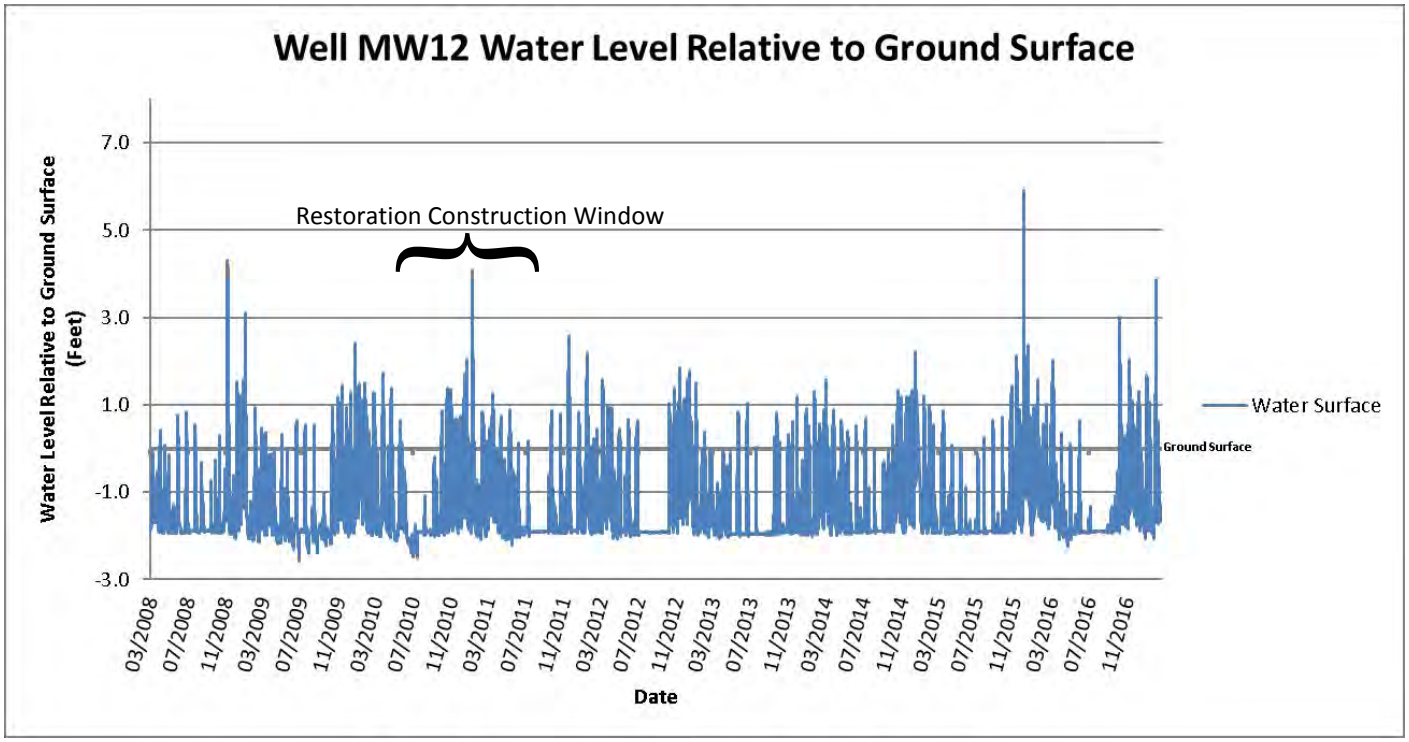
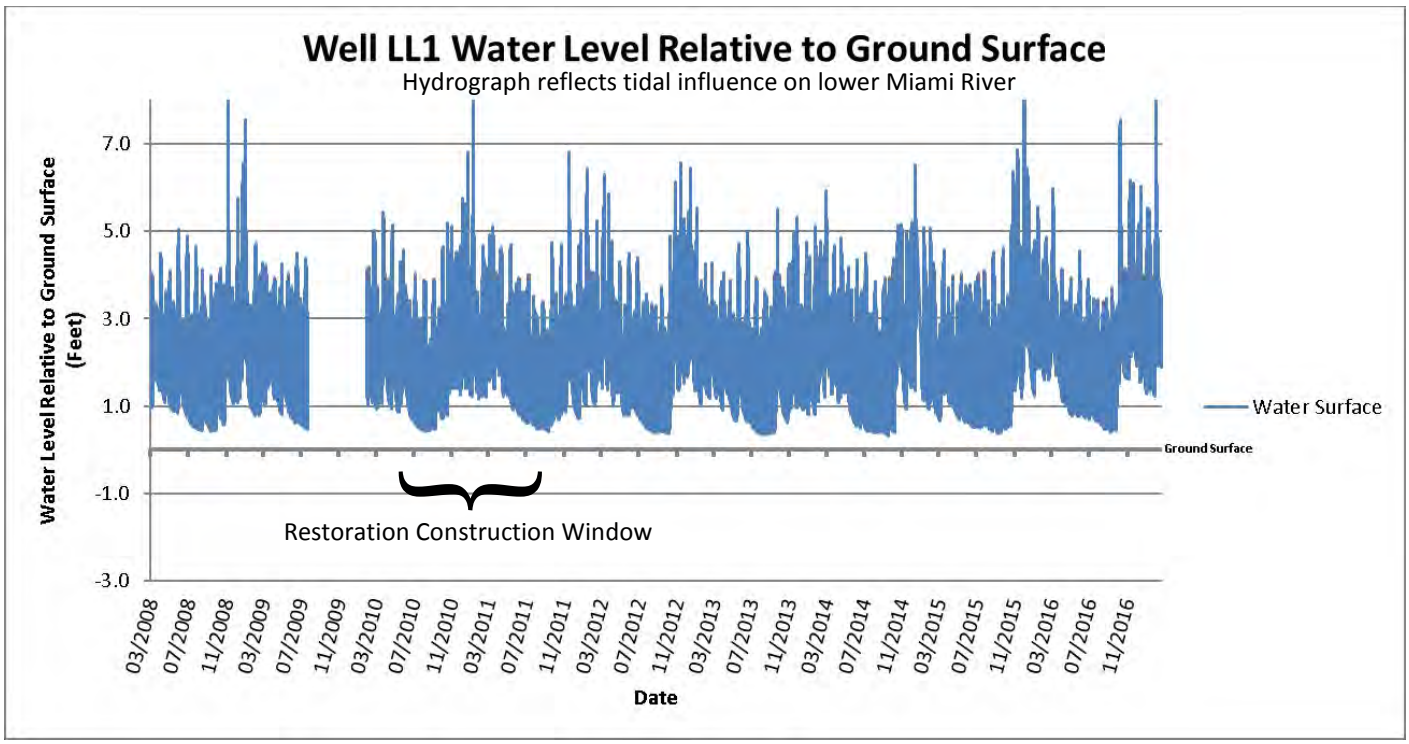


Figure A1. continued



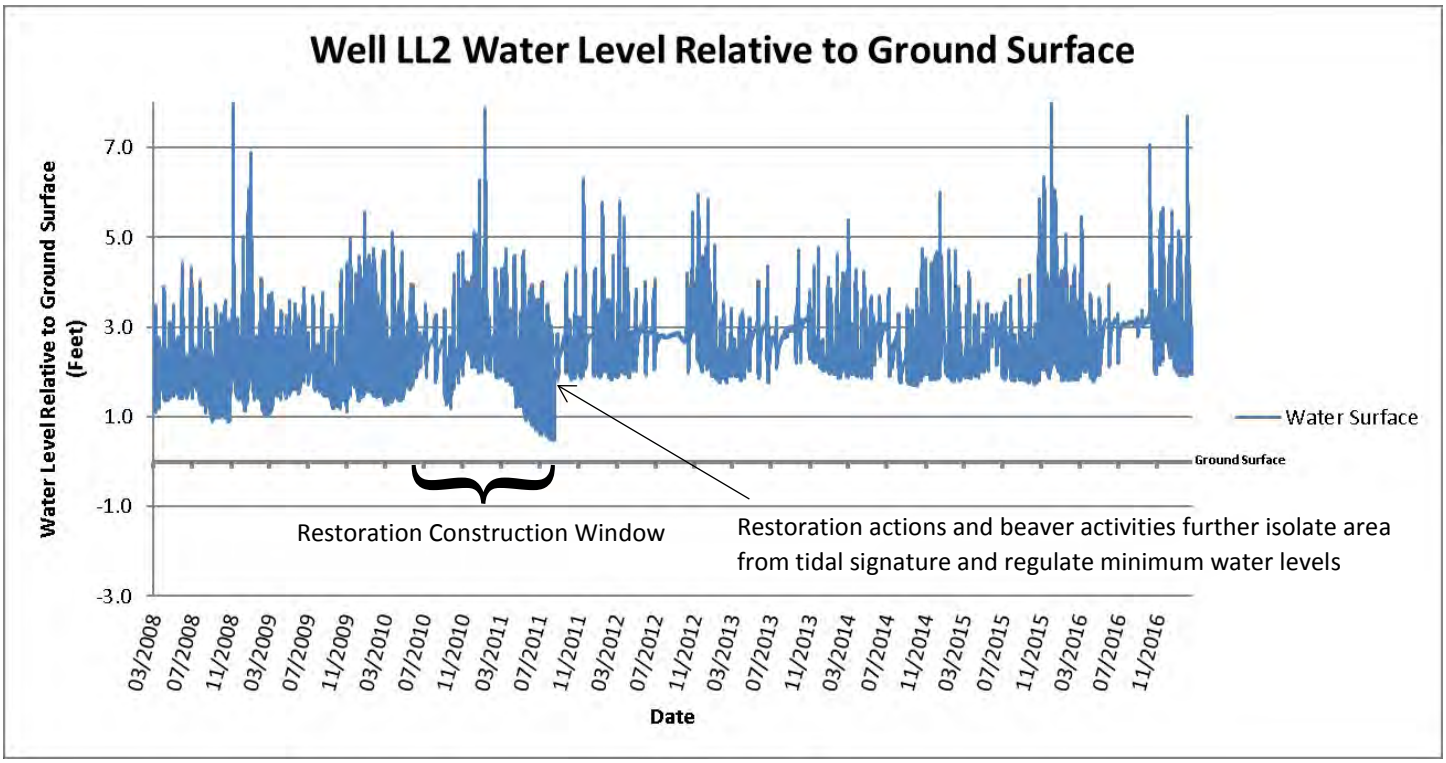
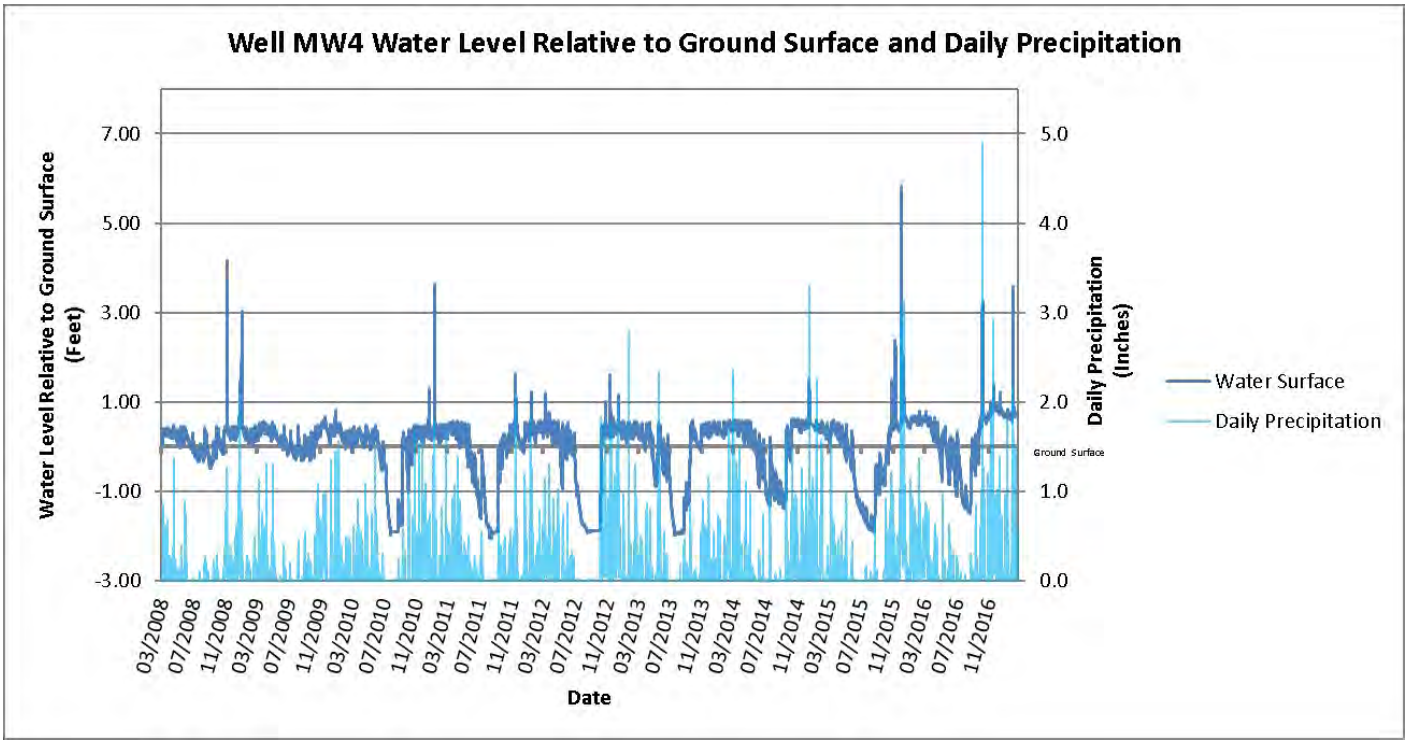


Figure A2. Water levels relative to ground surface and daily precipitation and water level relative to mean sea level and tides for six groundwater and two in-channel wells at Miami Wetlands from March 2008 through February 2017.



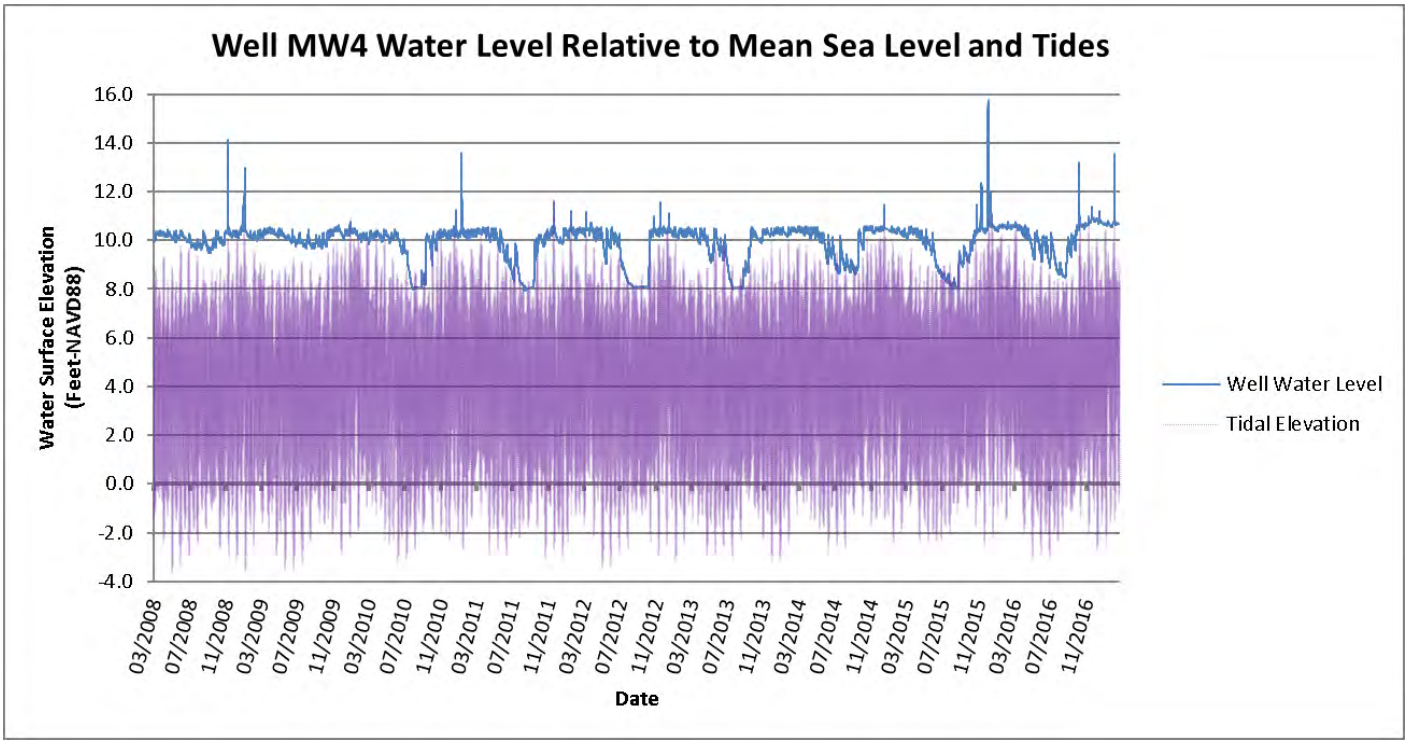
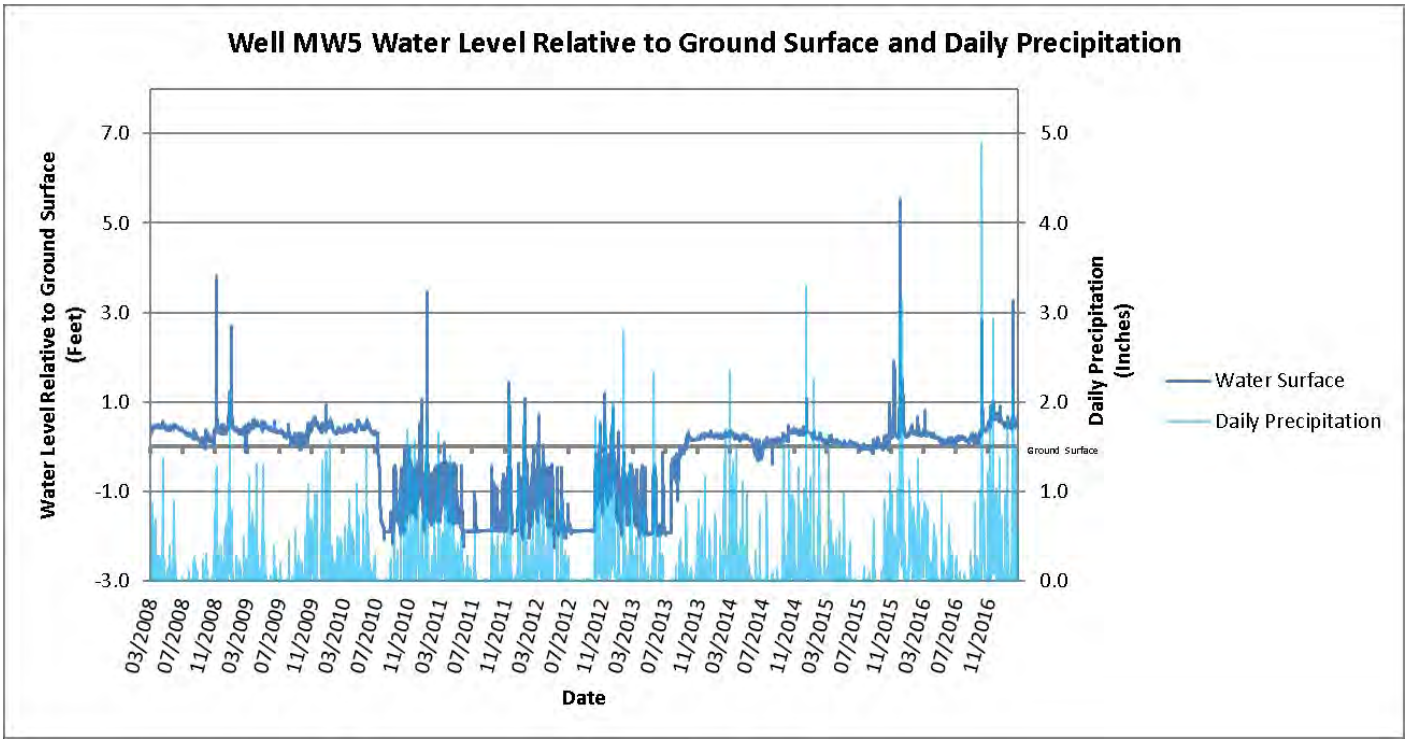
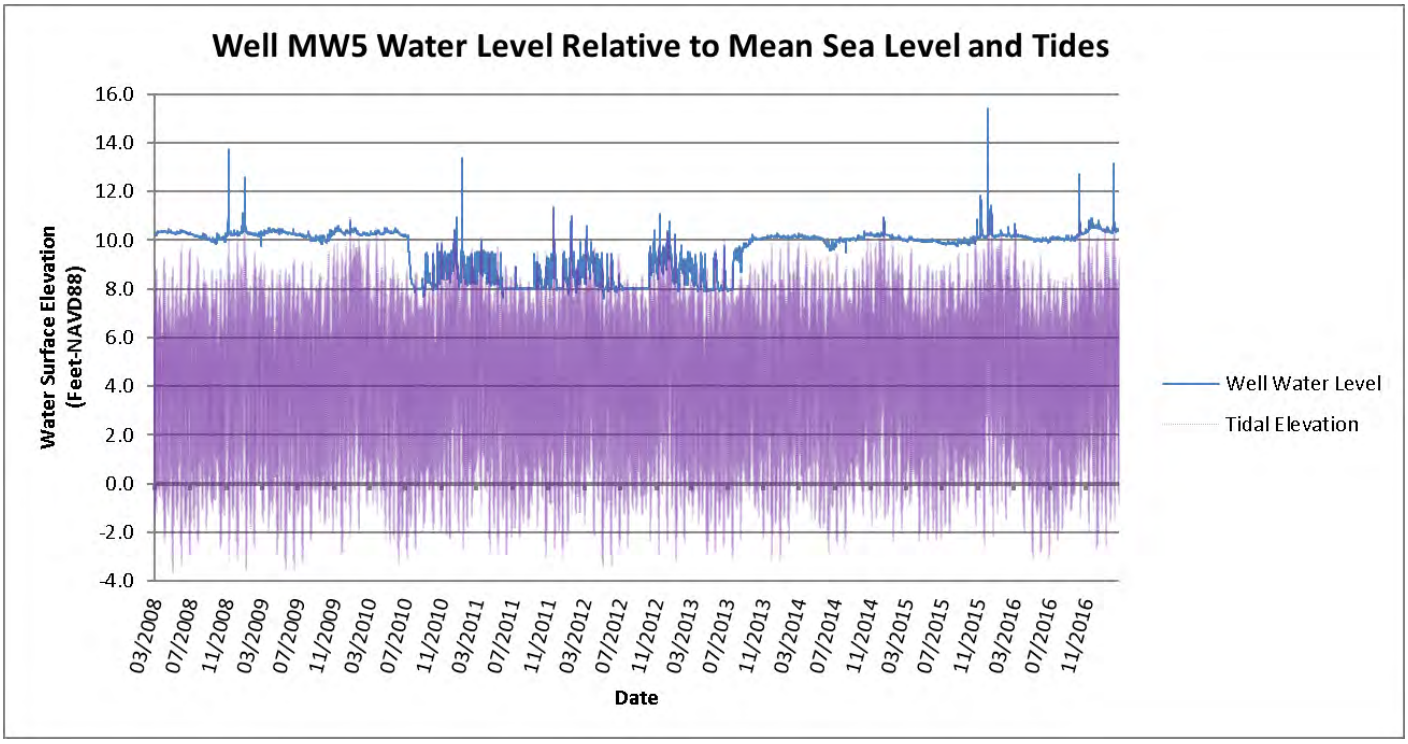


Figure A2. continued





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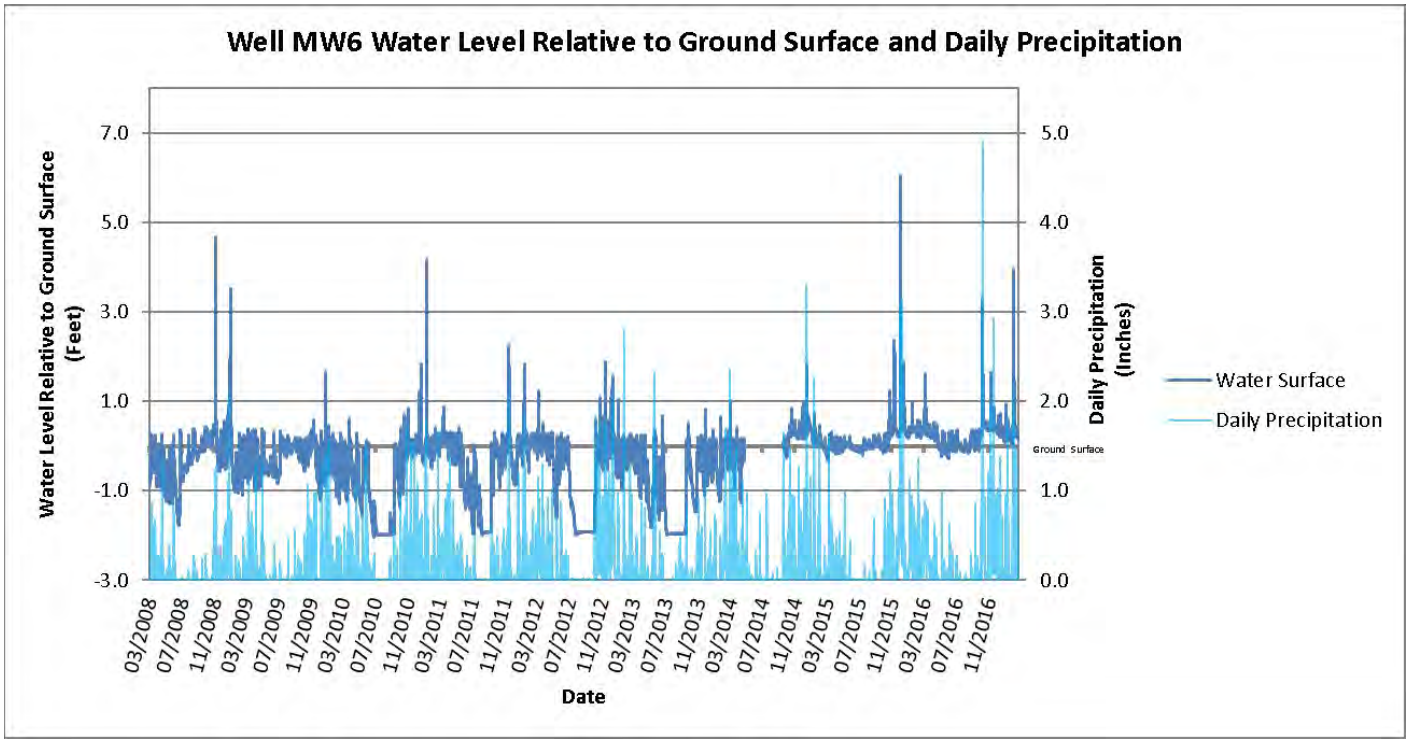

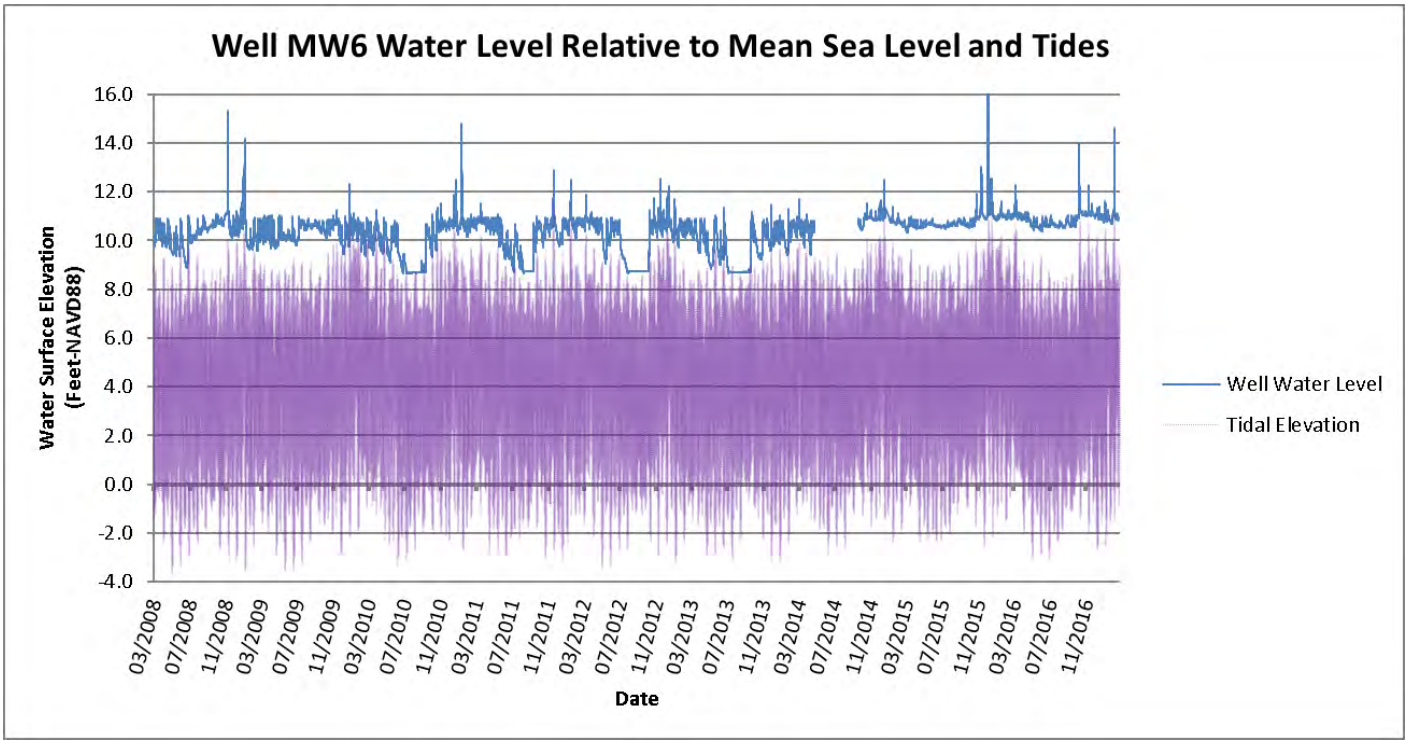

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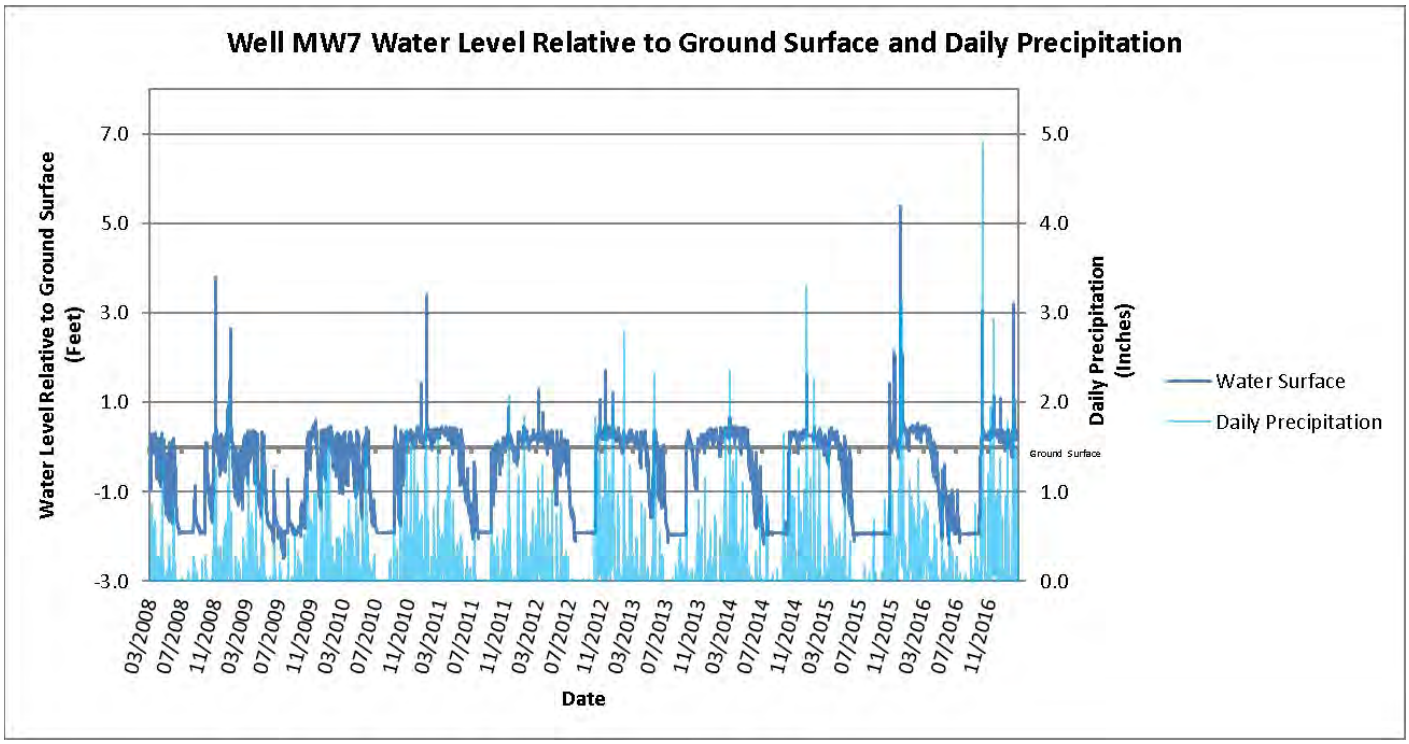


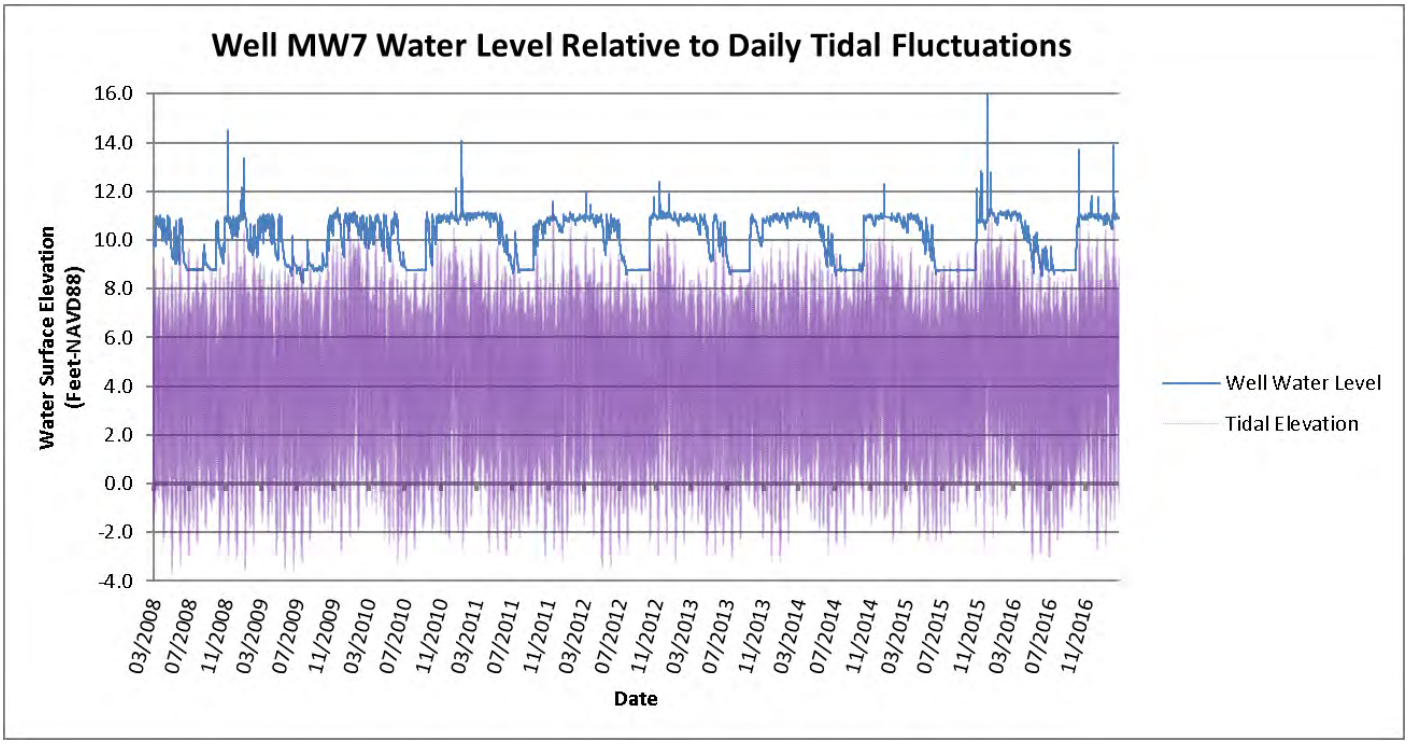
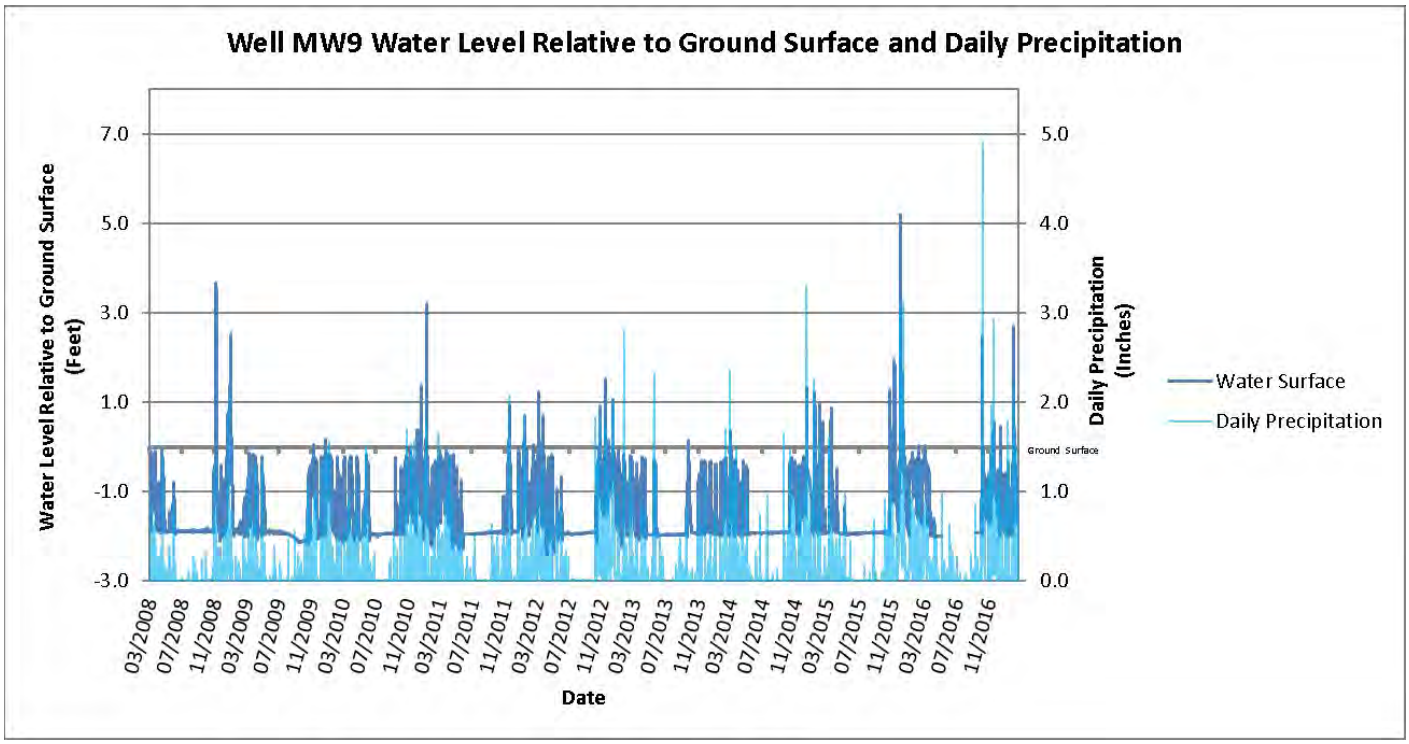


Figure A2. continued



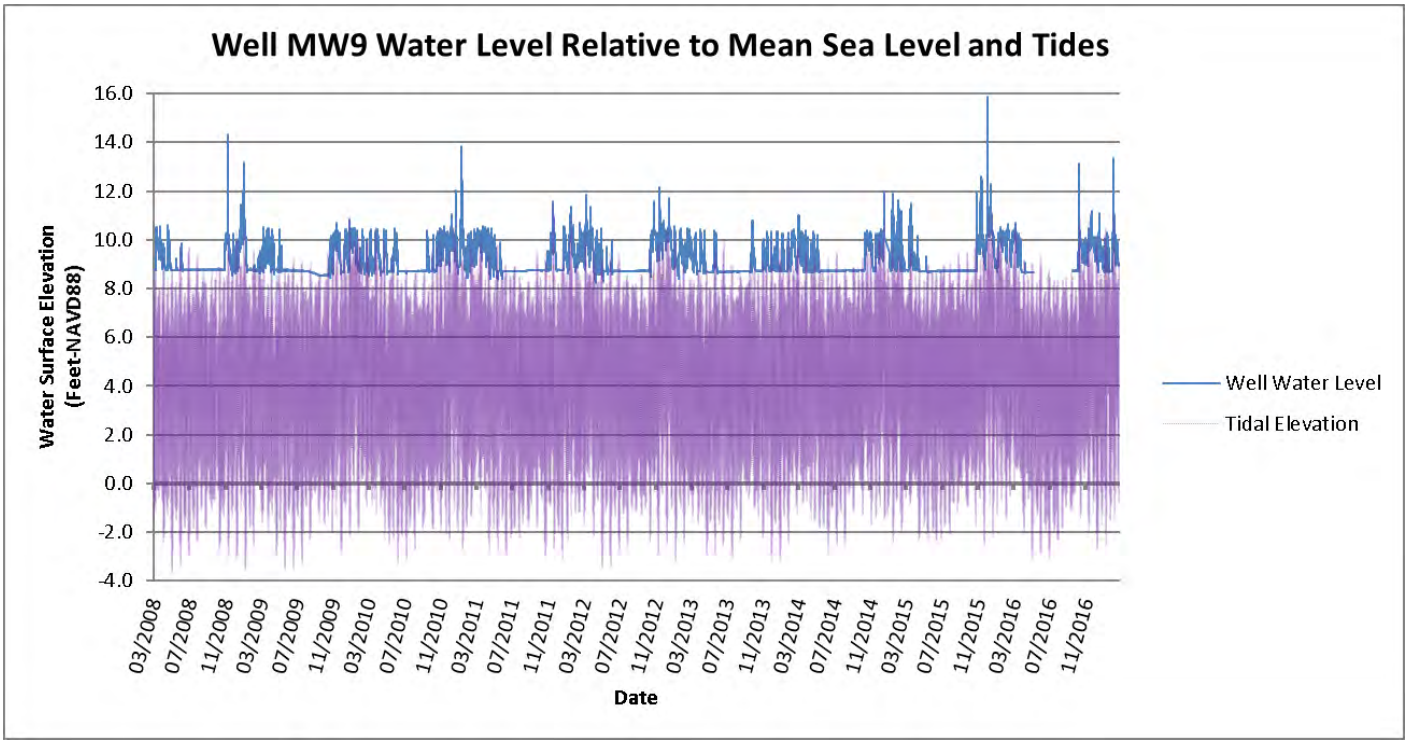
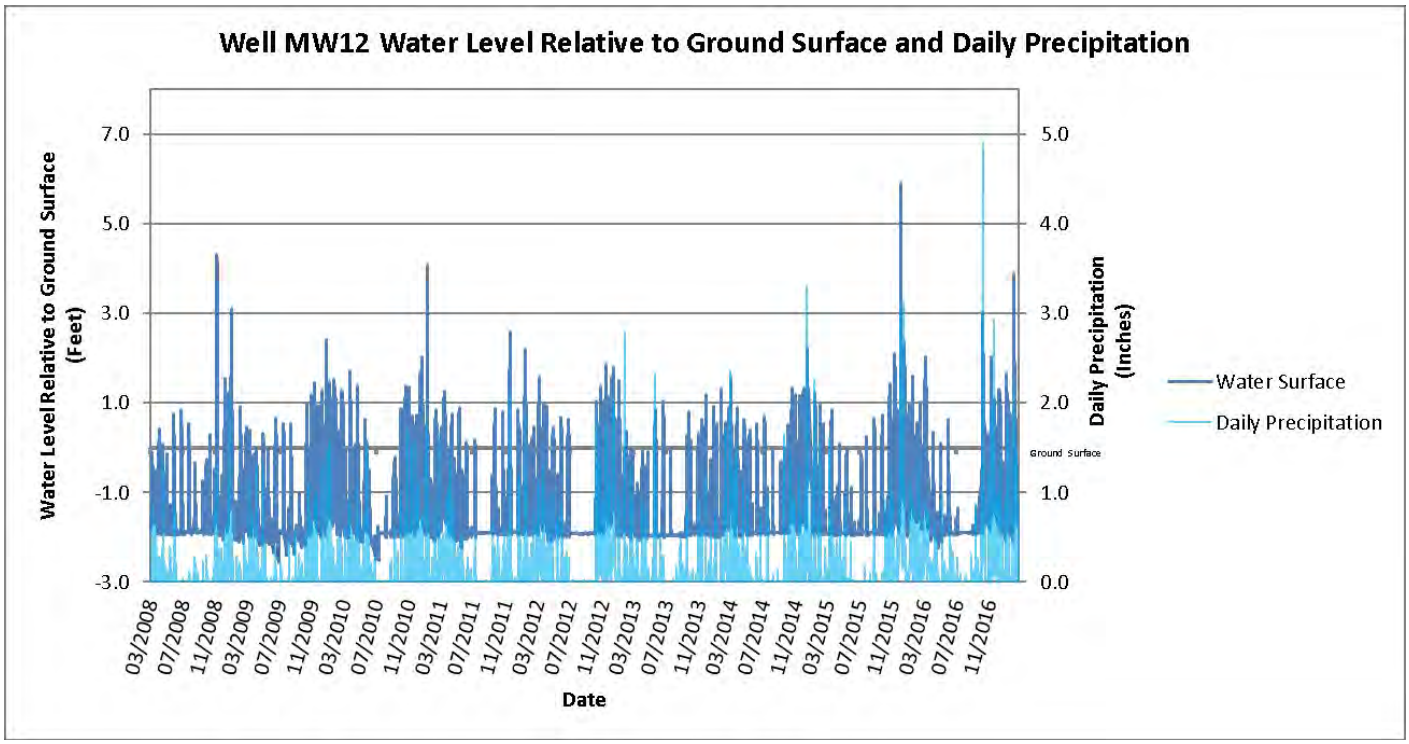


Figure A2. Continued



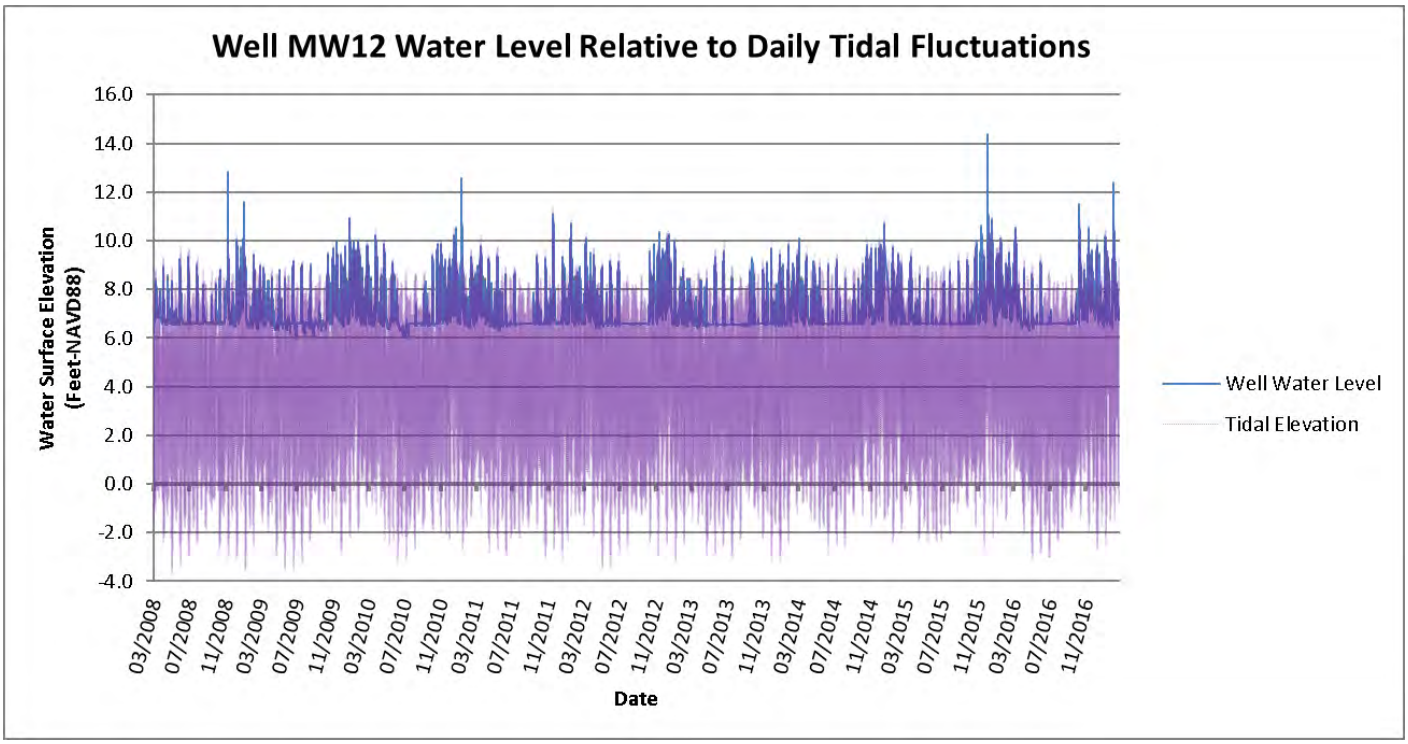
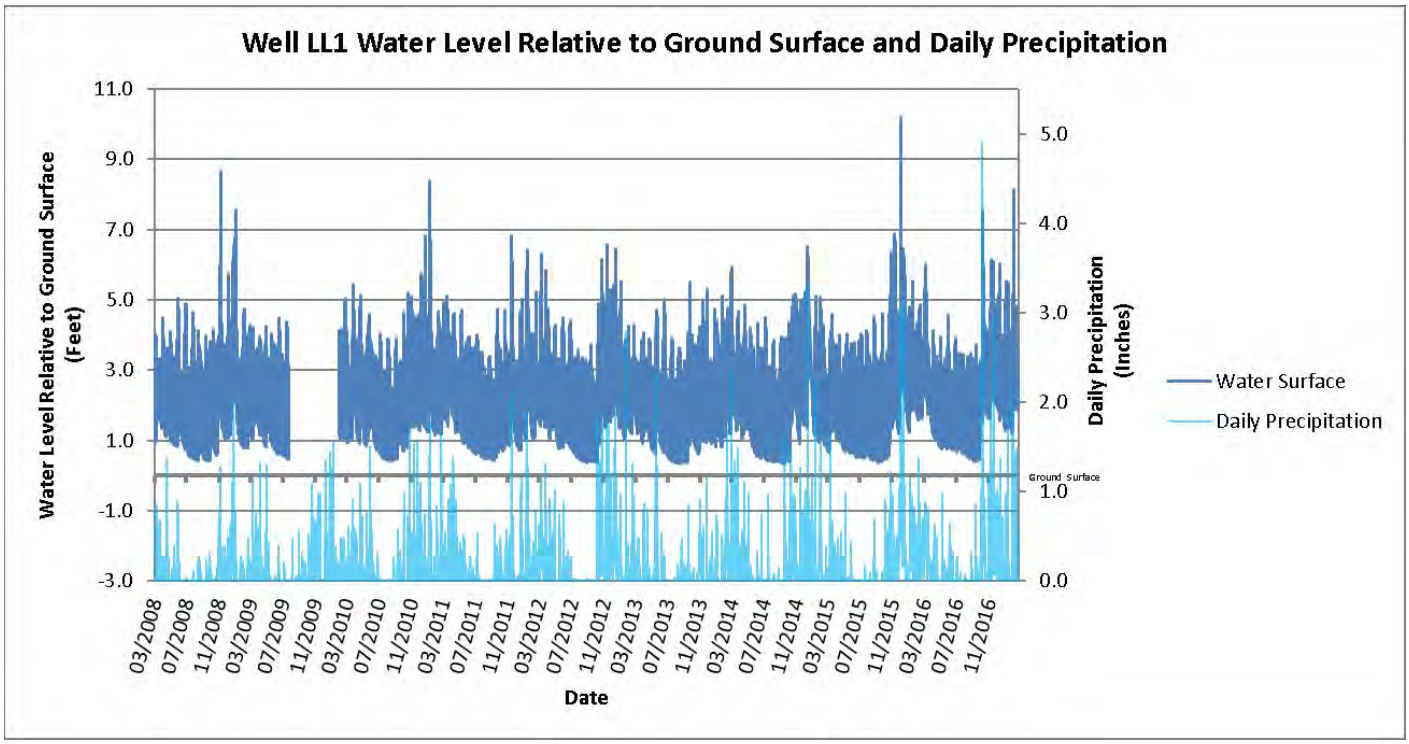


Figure A2. Continued



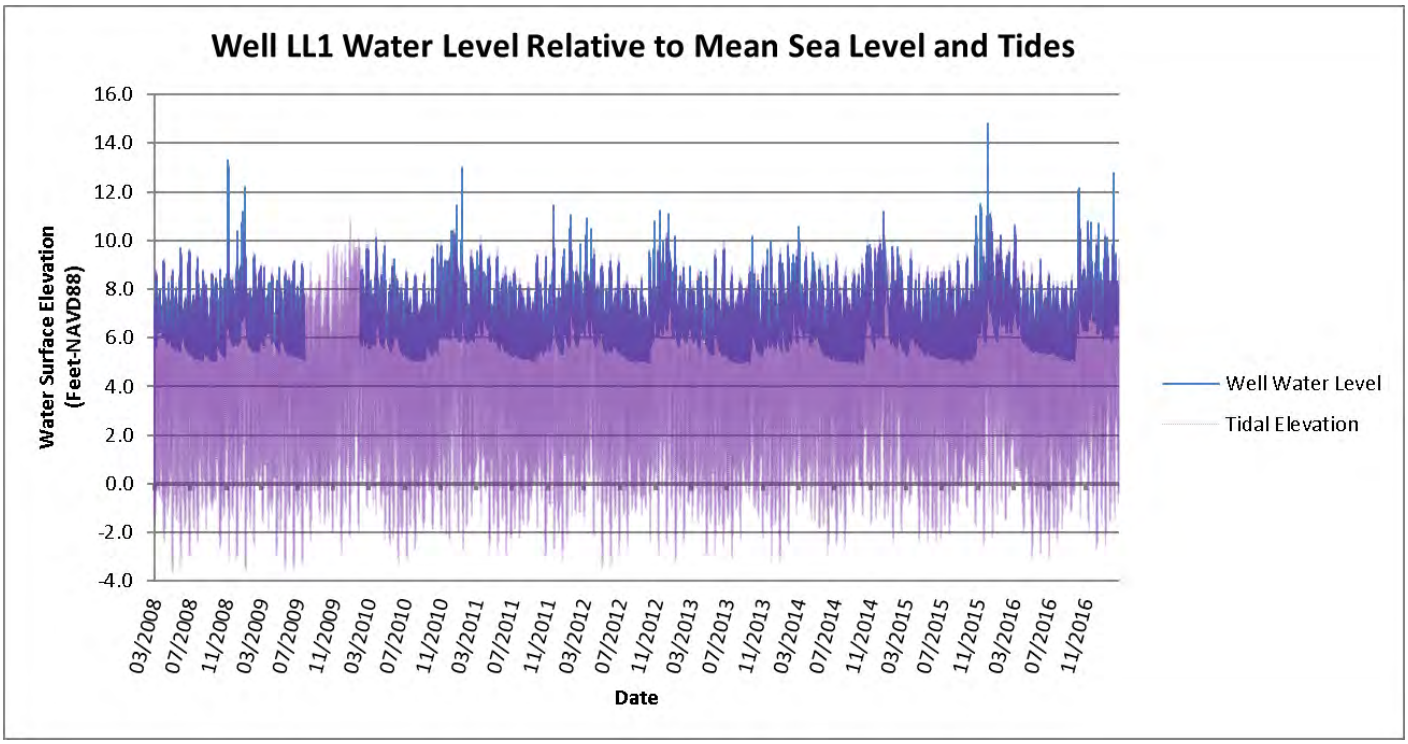
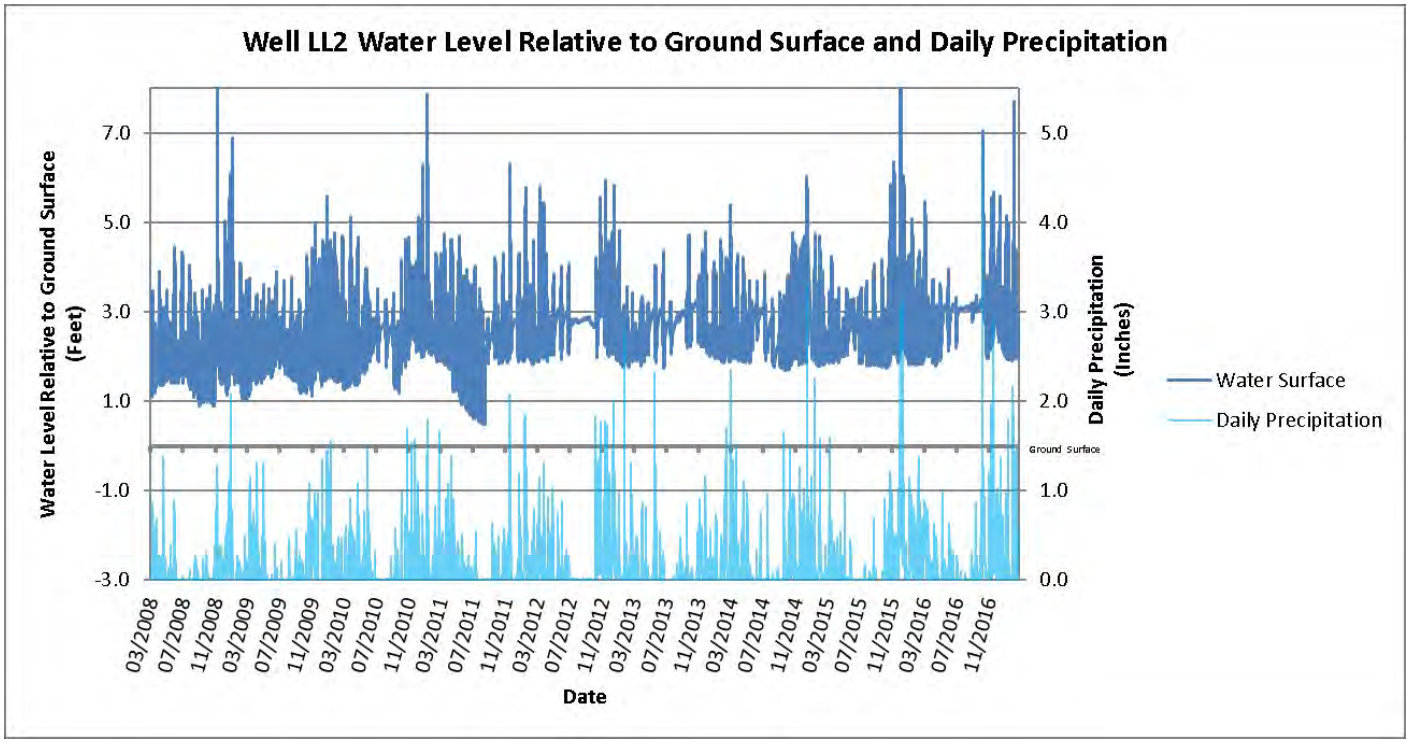
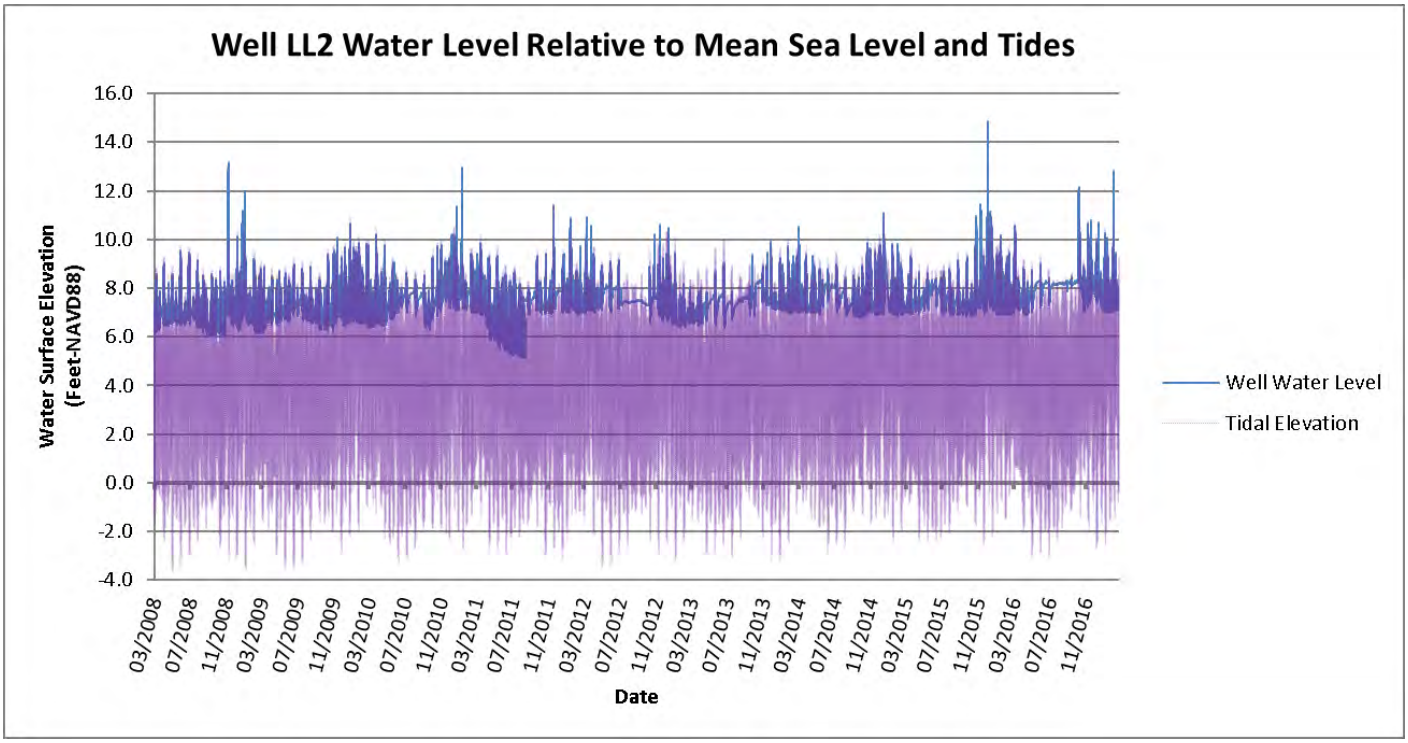


Figure A2. continued

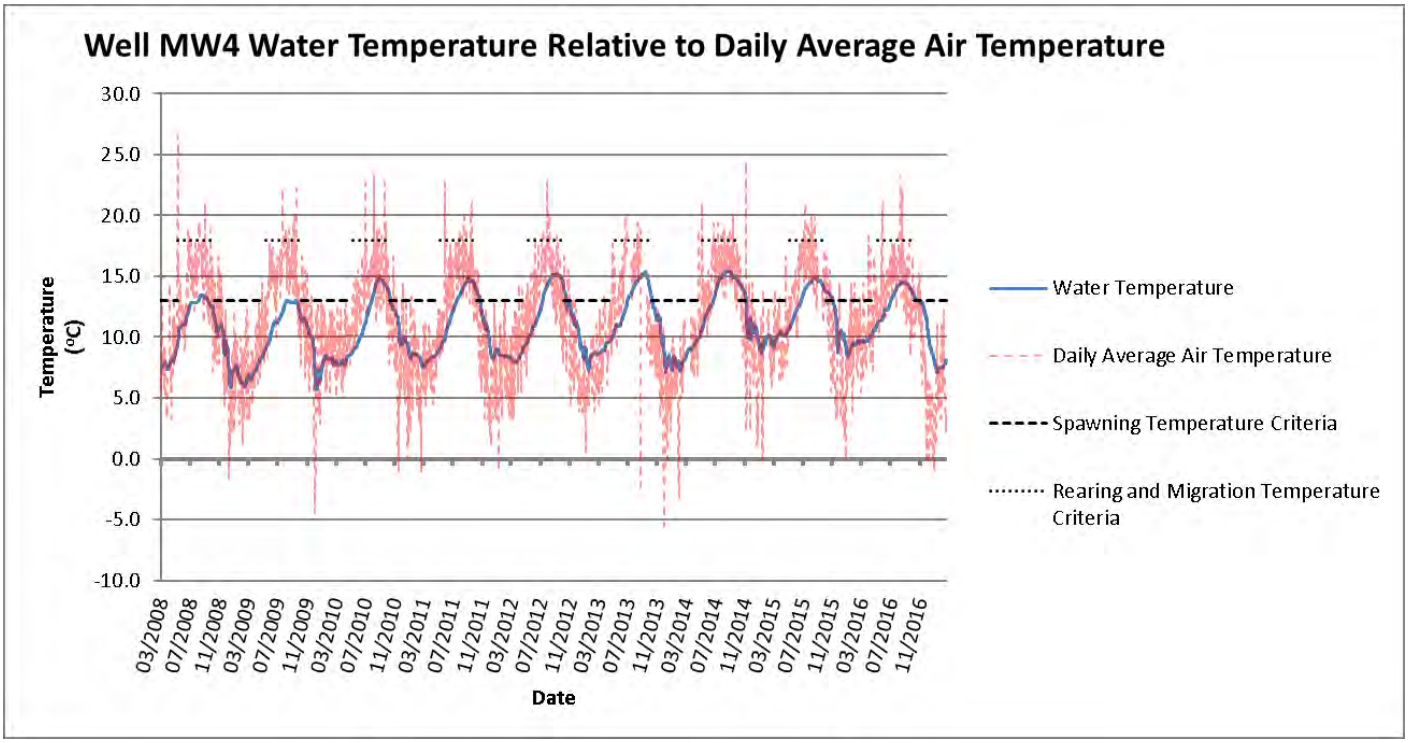


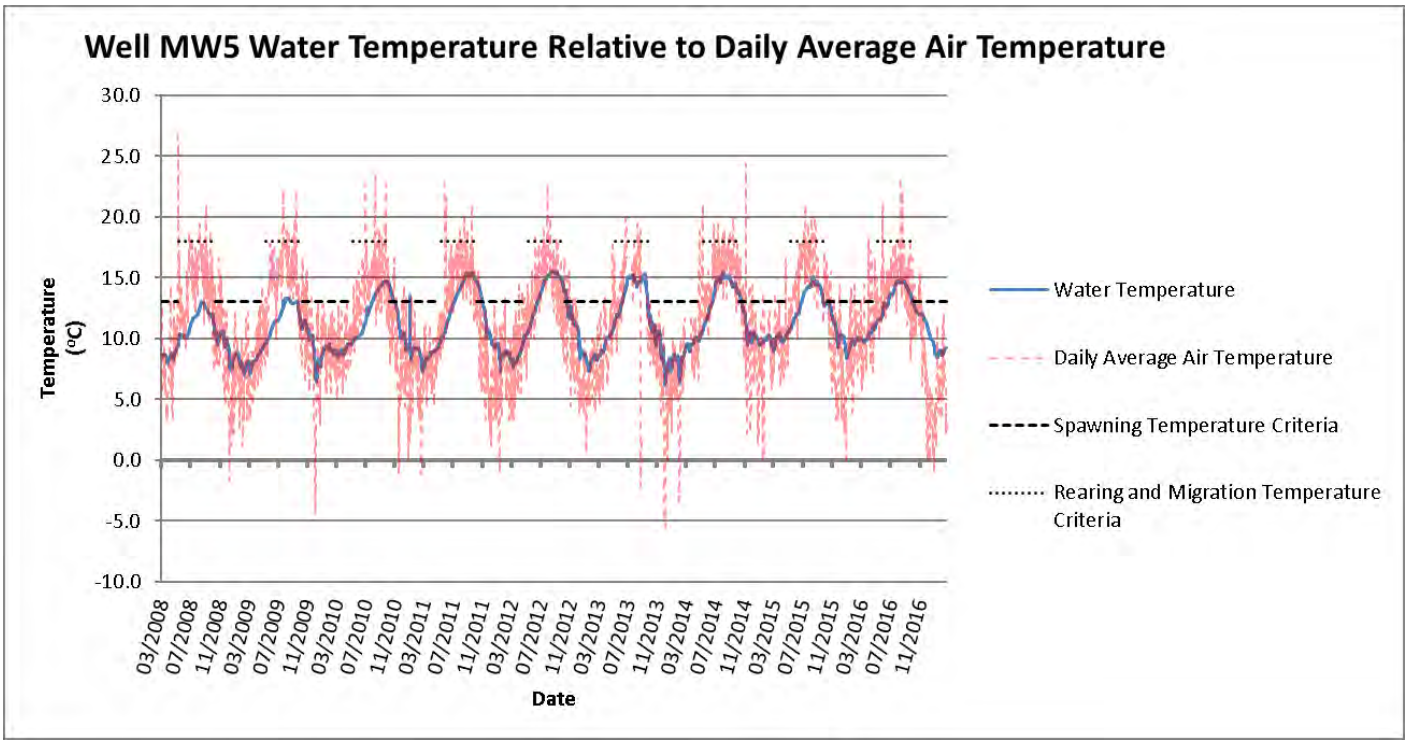


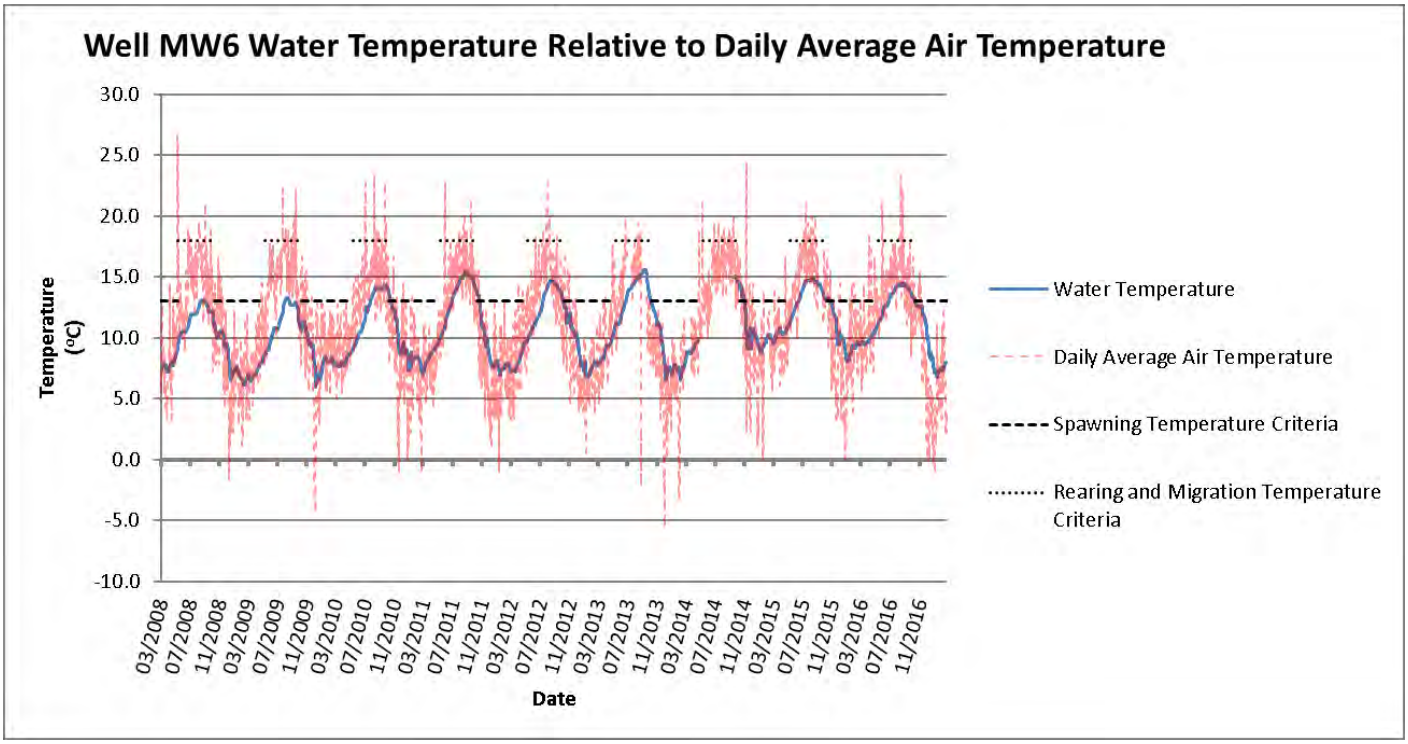
Appendix B

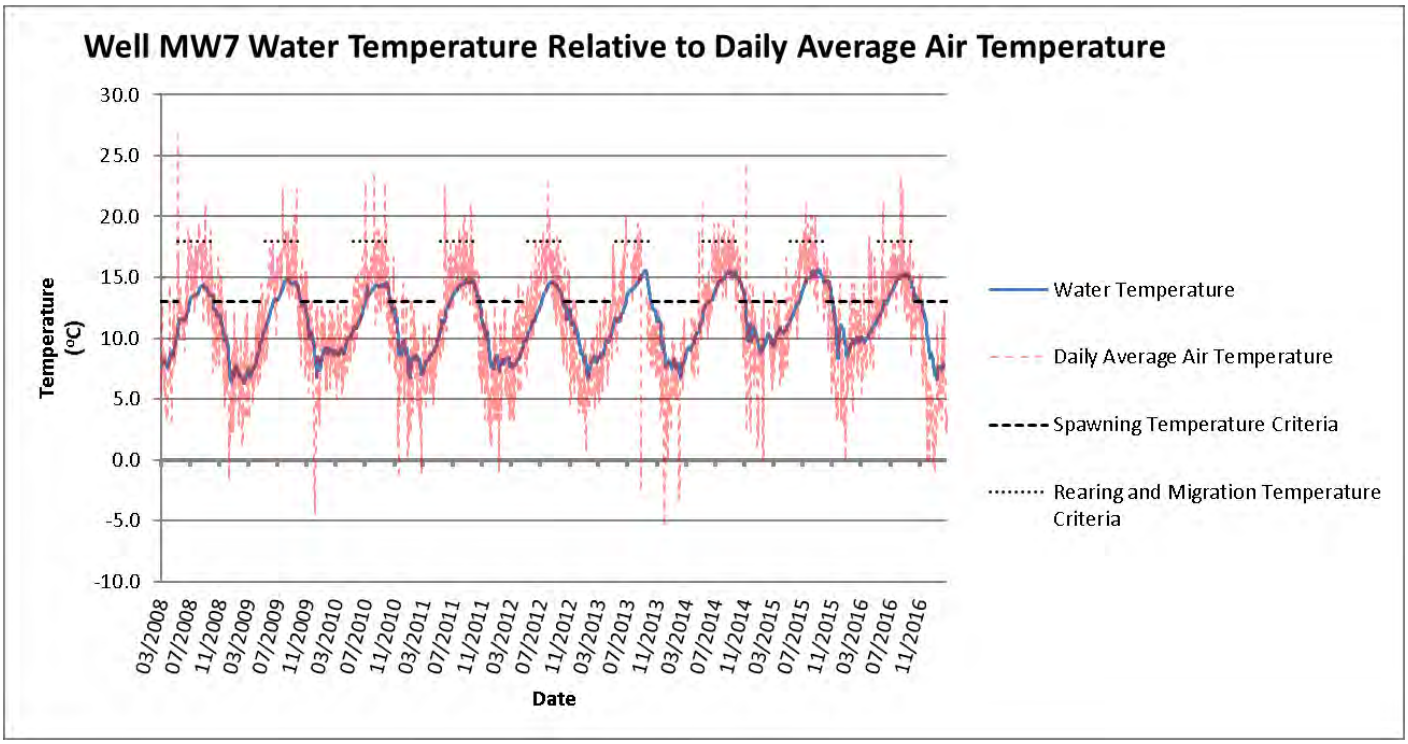
Graphs depicting water temperatures in water level monitoring wells at Miami Wetlands from March 2008 through February 2017

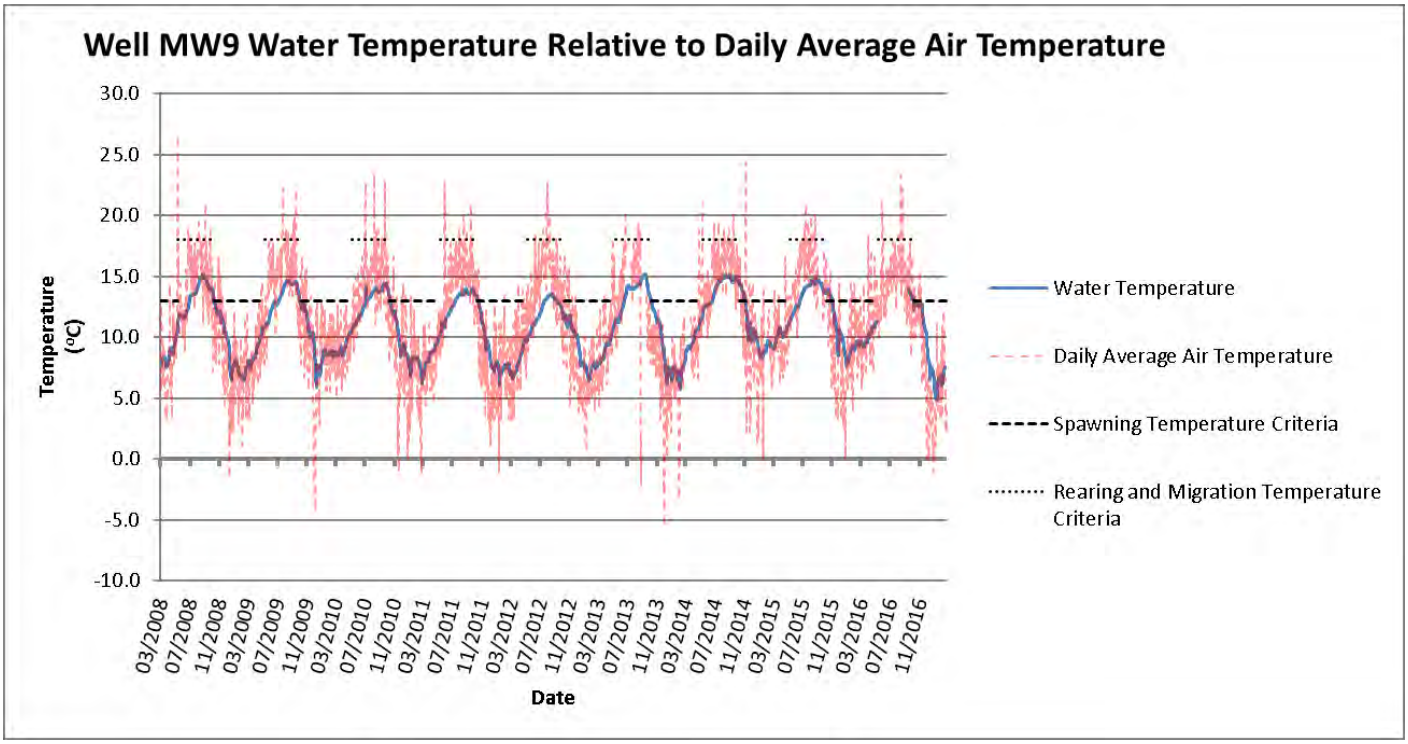
Figure B. Graphs depicting water temperatures in water level monitoring wells at Miami Wetlands from March 2008 through February 2017

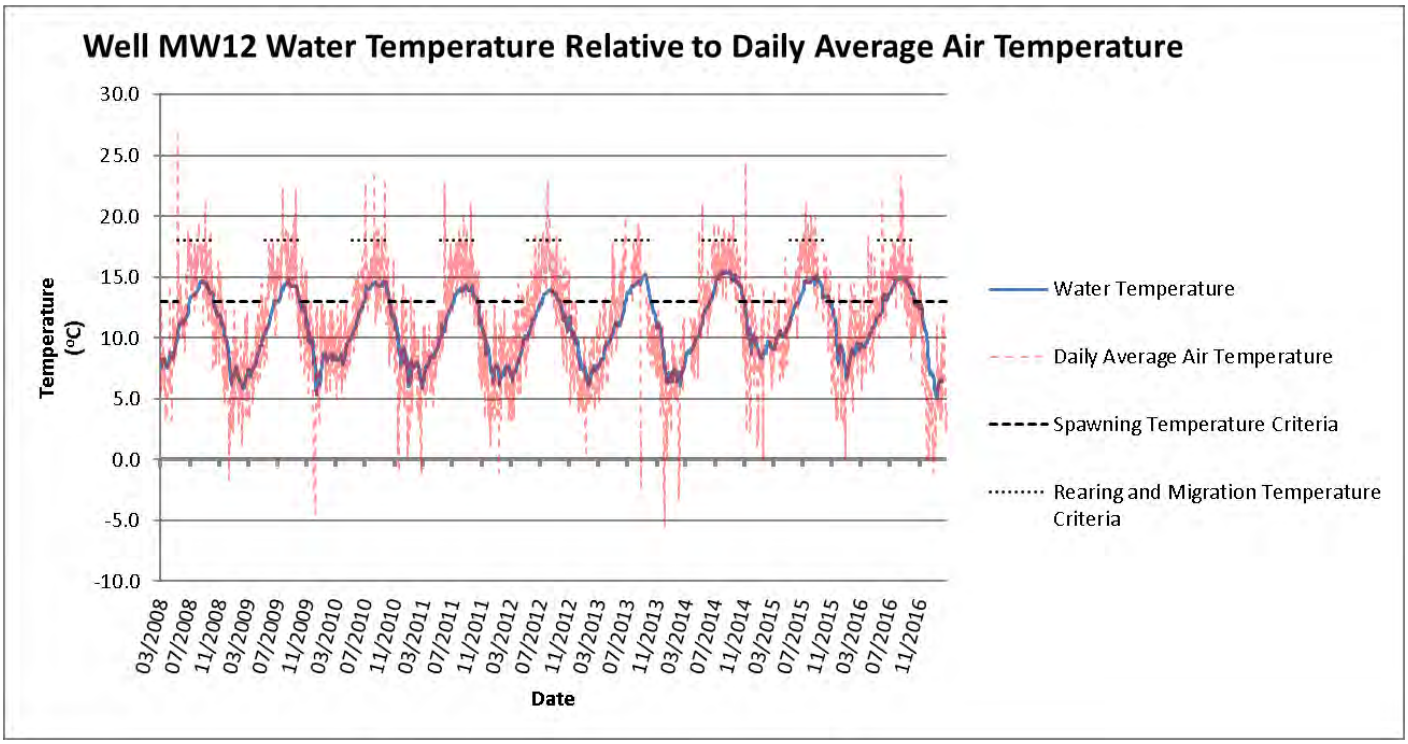


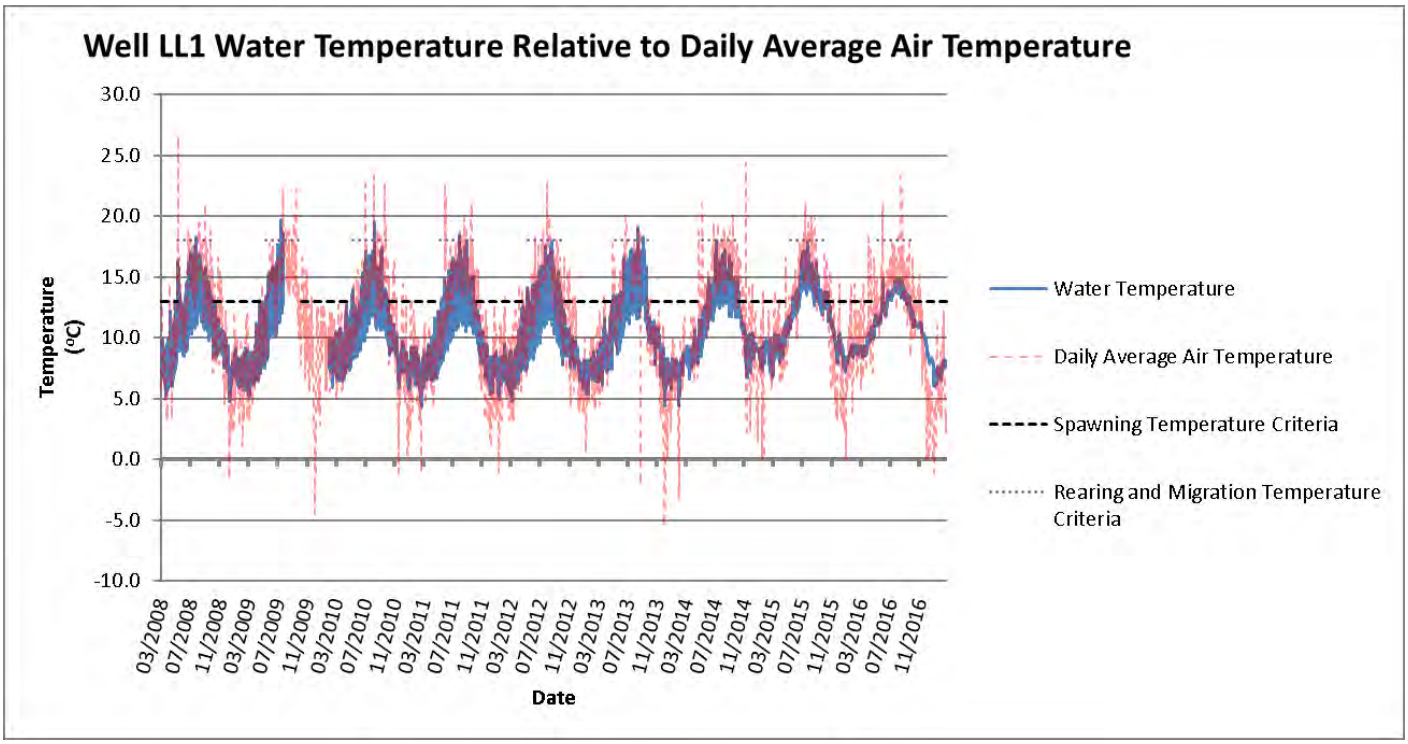


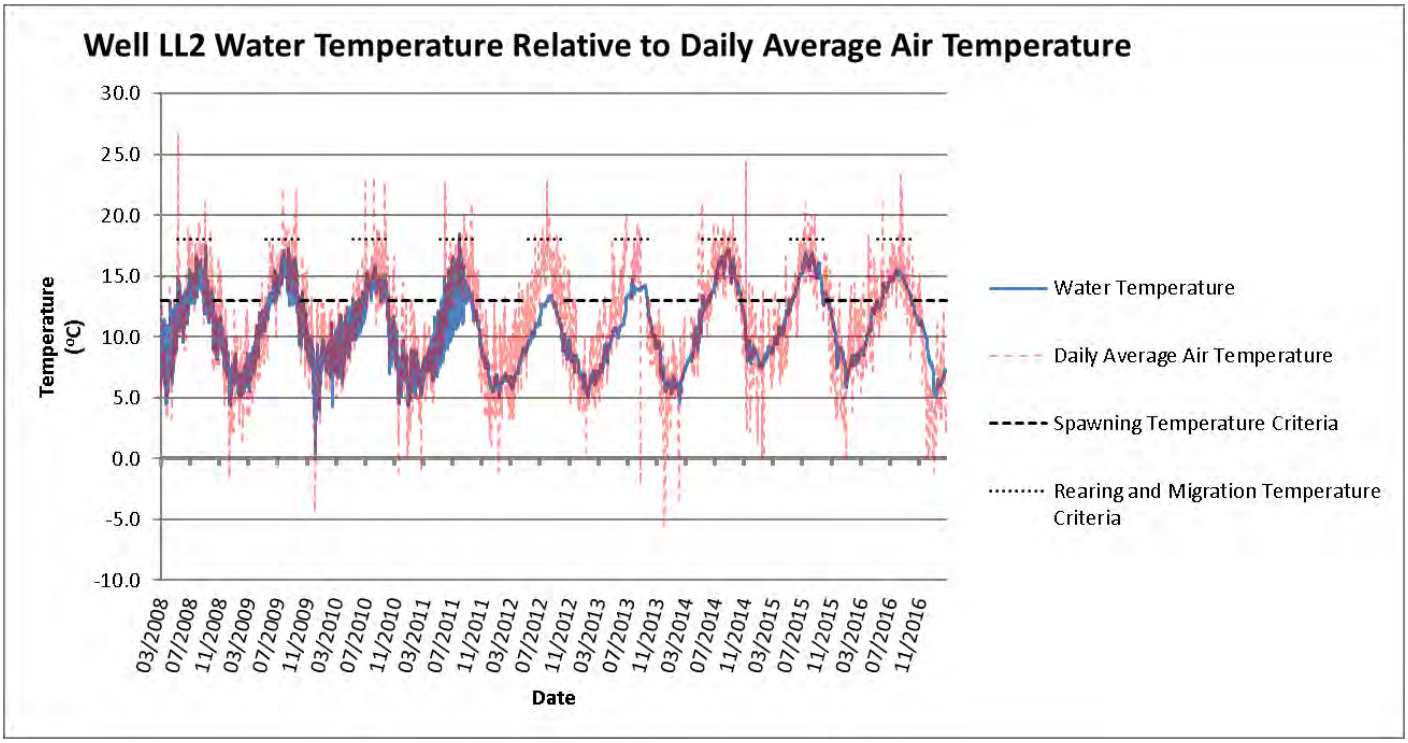

Well MW6 Water Temperature Relative to Daily Average Air Temperature
Temperature (°C)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
03/2008
07/2008
11/2008
03/2009
07/2009
11/2009
03/2010
07/2010
11/2010
03/2011
07/2011
11/2011
03/2012
07/2012
11/2012
03/2013
07/2013
11/2013
03/2014
07/2014
11/2014
03/2015
07/2015
11/2015
03/2016
07/2016
11/2016
Date
Water Temperature
Daily Average Air Temperature
Spawning Temperature Criteria
Rearing and Migration Temperature Criteria


Well MW7 Water Temperature Relative to Daily Average Air Temperature
Temperature (°C)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
03/2008
07/2008
11/2008
03/2009
07/2009
11/2009
03/2010
07/2010
11/2010
03/2011
07/2011
11/2011
03/2012
07/2012
11/2012
03/2013
07/2013
11/2013
03/2014
07/2014
11/2014
03/2015
07/2015
11/2015
03/2016
07/2016
11/2016
Date
Water Temperature
Daily Average Air Temperature
Spawning Temperature Criteria
Rearing and Migration Temperature Criteria


Well MW9 Water Temperature Relative to Daily Average Air Temperature
Temperature (°C)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
03/2008
07/2008
11/2008
03/2009
07/2009
11/2009
03/2010
07/2010
11/2010
03/2011
07/2011
11/2011
03/2012
07/2012
11/2012
03/2013
07/2013
11/2013
03/2014
07/2014
11/2014
03/2015
07/2015
11/2015
03/2016
07/2016
11/2016
Date
Water Temperature
Daily Average Air Temperature
Spawning Temperature Criteria
Rearing and Migration Temperature Criteria


Well MW12 Water Temperature Relative to Daily Average Air Temperature
Temperature (°C)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
03/2008
07/2008
11/2008
03/2009
07/2009
11/2009
03/2010
07/2010
11/2010
03/2011
07/2011
11/2011
03/2012
07/2012
11/2012
03/2013
07/2013
11/2013
03/2014
07/2014
11/2014
03/2015
07/2015
11/2015
03/2016
07/2016
11/2016
Date
Water Temperature
Daily Average Air Temperature
Spawning Temperature Criteria
Rearing and Migration Temperature Criteria


Well LL1 Water Temperature Relative to Daily Average Air Temperature
Temperature (ºC)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
03/2008
07/2008
11/2008
03/2009
07/2009
11/2009
03/2010
07/2010
11/2010
03/2011
07/2011
11/2011
03/2012
07/2012
11/2012
03/2013
07/2013
11/2013
03/2014
07/2014
11/2014
03/2015
07/2015
11/2015
03/2016
07/2016
11/2016
Date
Water Temperature
Daily Average Air Temperature
Spawning Temperature Criteria
Rearing and Migration Temperature Criteria


Well LL2 Water Temperature Relative to Daily Average Air Temperature
Temperature (ºC)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
-10.0
03/2008
07/2008
11/2008
03/2009
07/2009
11/2009
03/2010
07/2010
11/2010
03/2011
07/2011
11/2011
03/2012
07/2012
11/2012
03/2013
07/2013
11/2013
03/2014
07/2014
11/2014
03/2015
07/2015
11/2015
03/2016
07/2016
11/2016
Date
Water Temperature
Daily Average Air Temperature
Spawning Temperature Criteria
Rearing and Migration Temperature Criteria

Appendix C

Graphs depicting post-restoration water temperatures in constructed channels at the Miami Wetlands

Figure C1. Graphs depicting post-restoration water temperatures in constructed channels at the Miami Wetlands during spring 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.

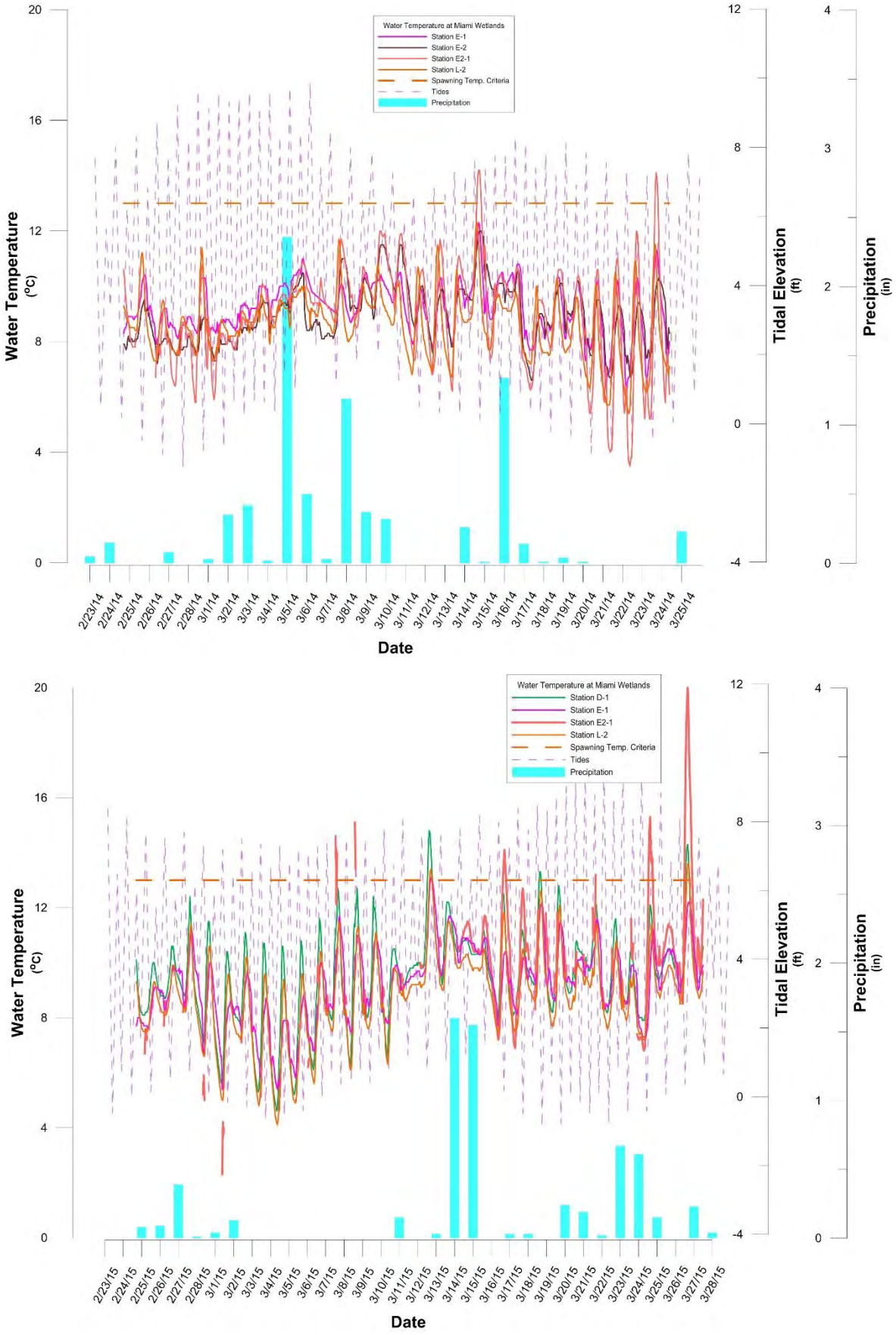


Figure C1. continued

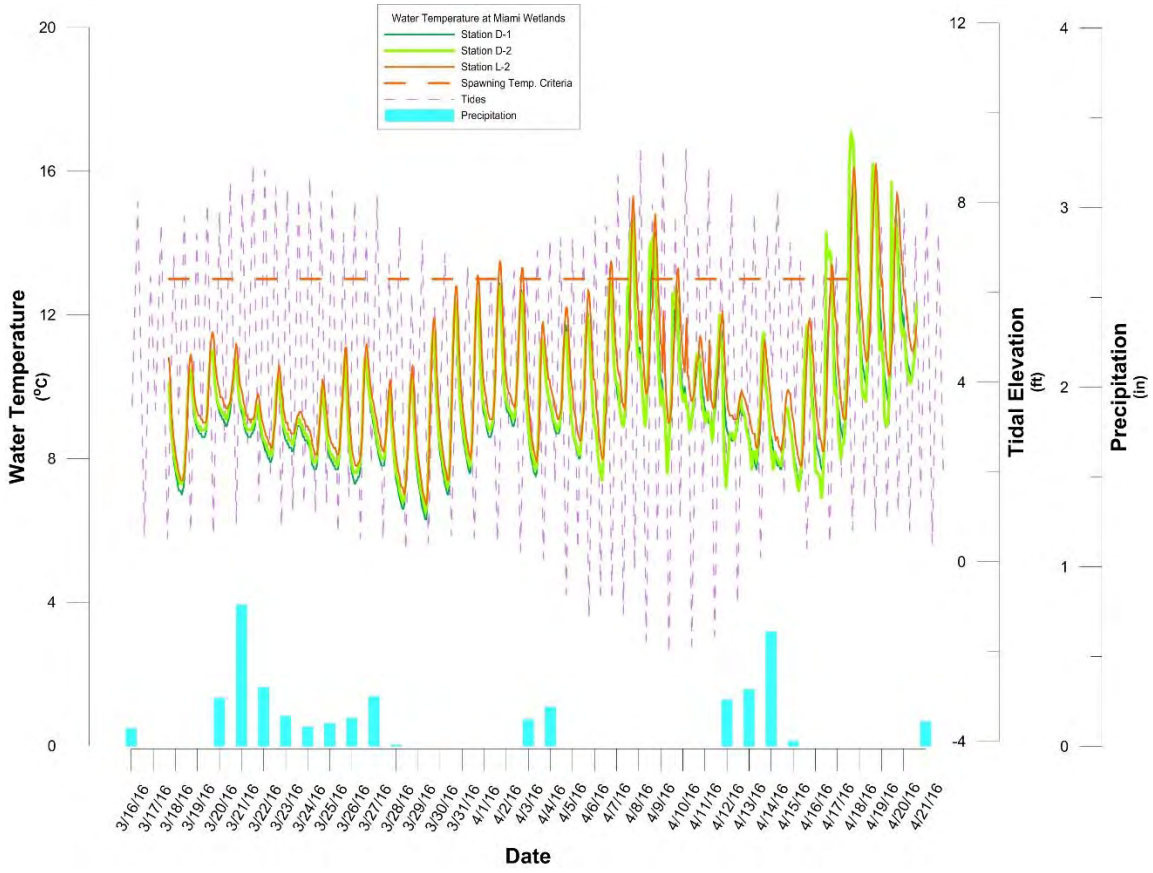


Figure C2. Graphs depicting post-restoration water temperatures in constructed channels at the Miami Wetlands during summer 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.

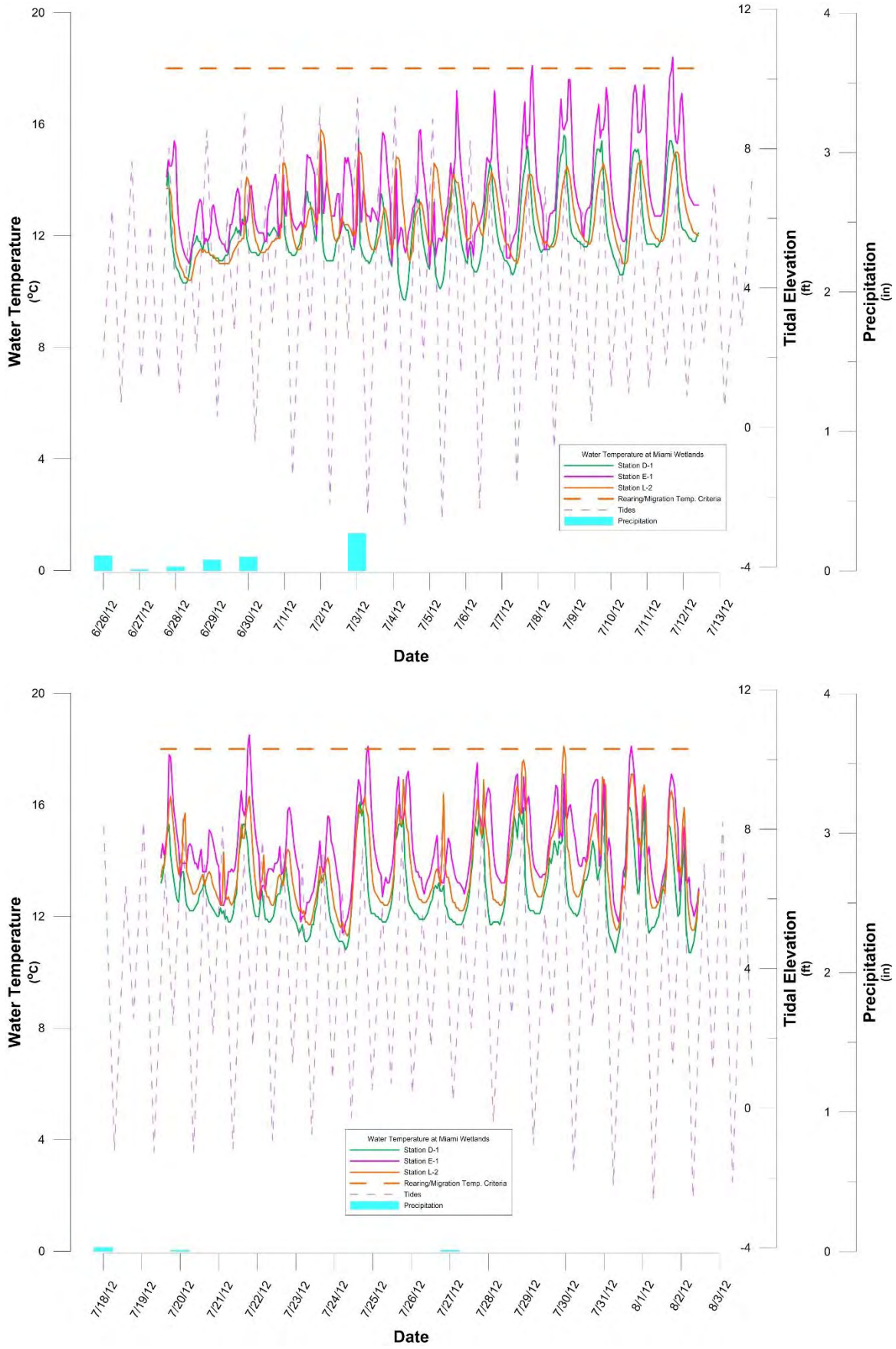
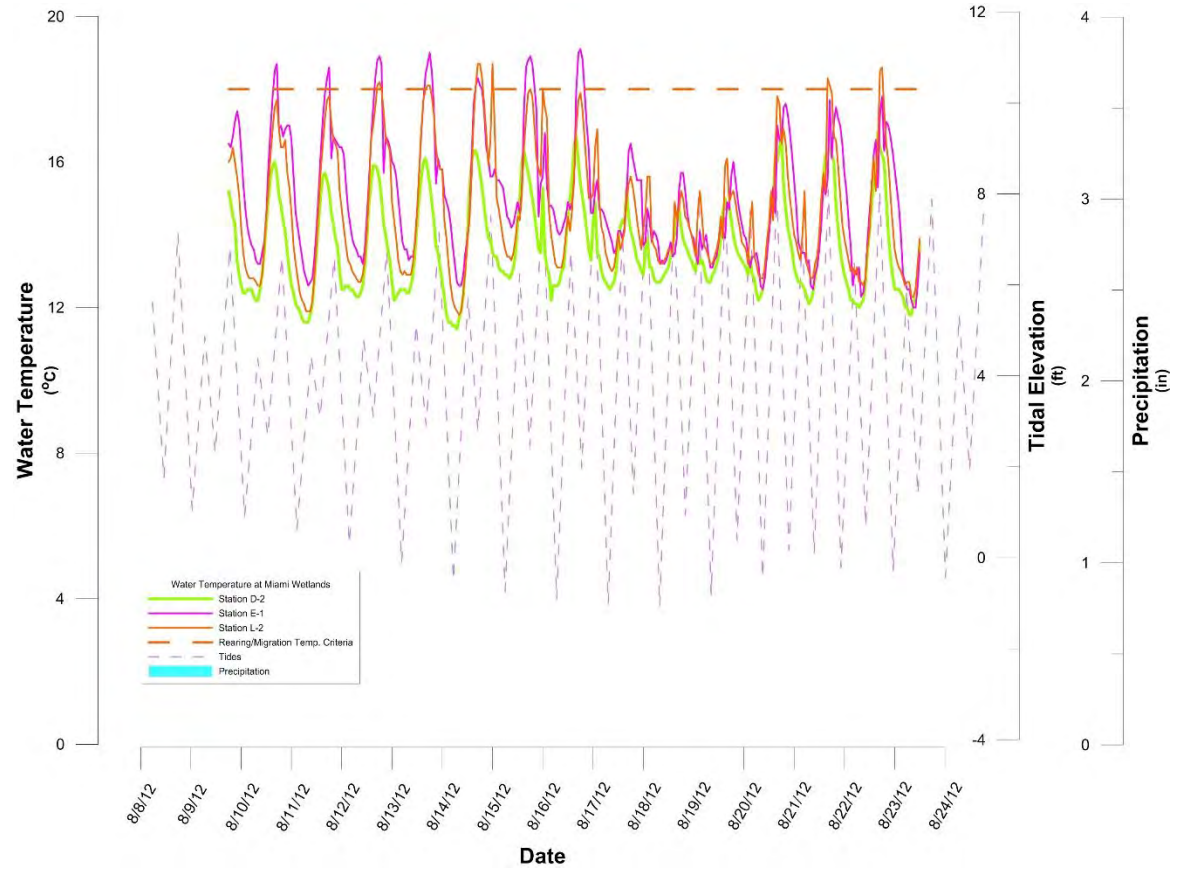


Figure C2. continued



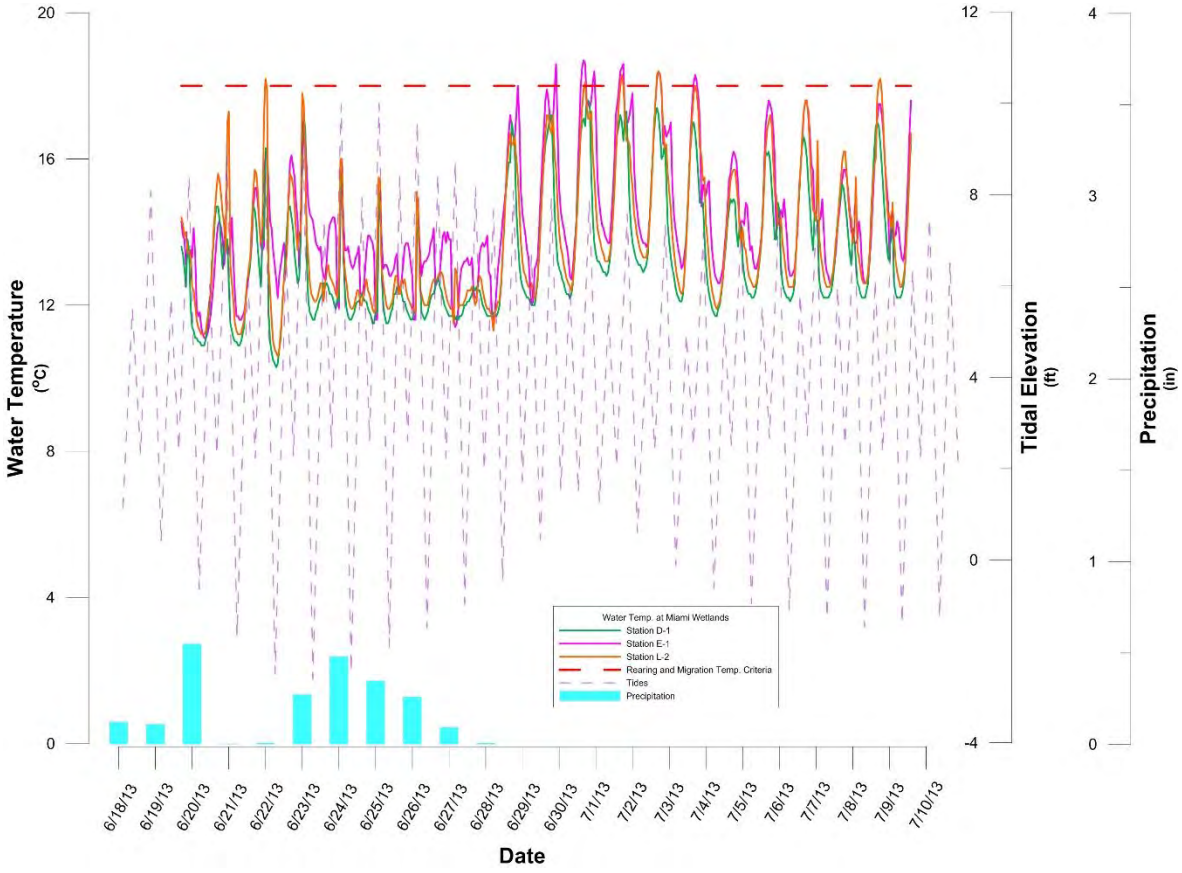
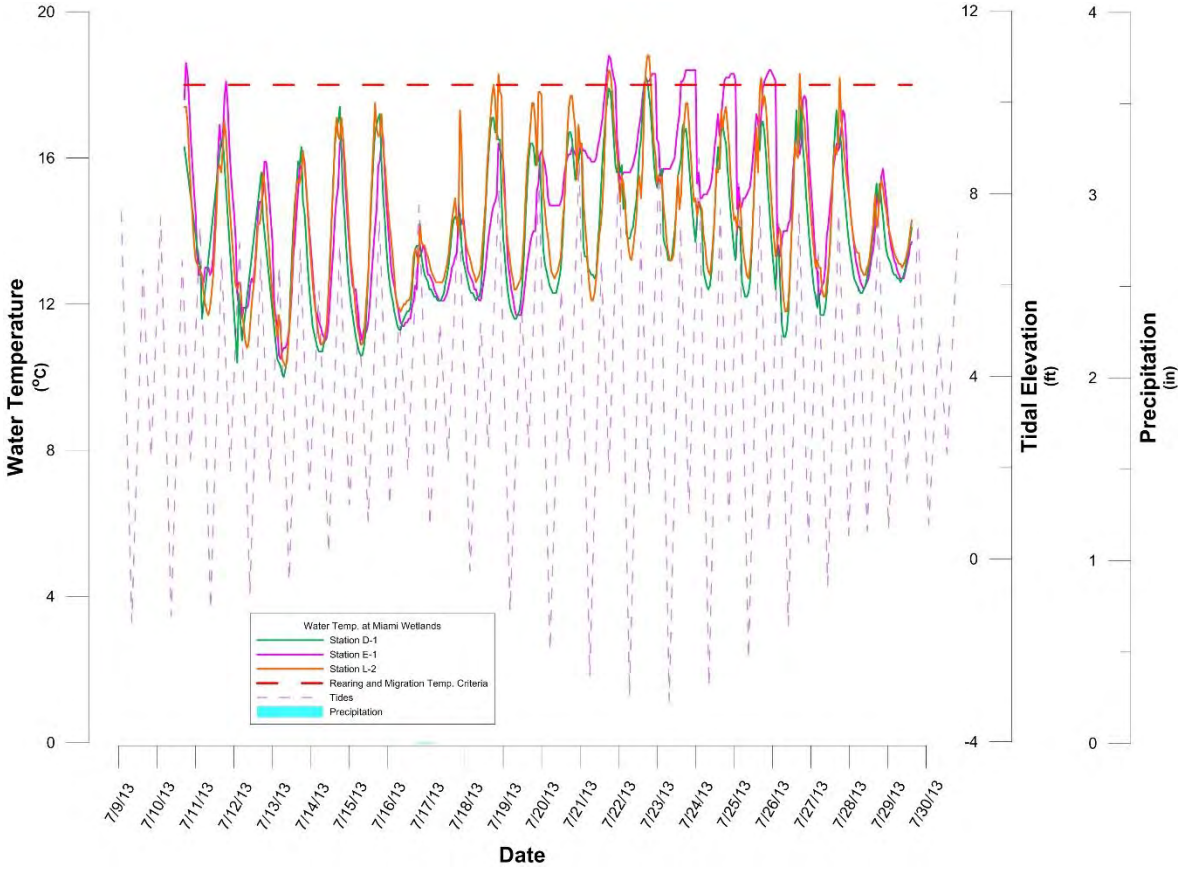


Figure C2. continued



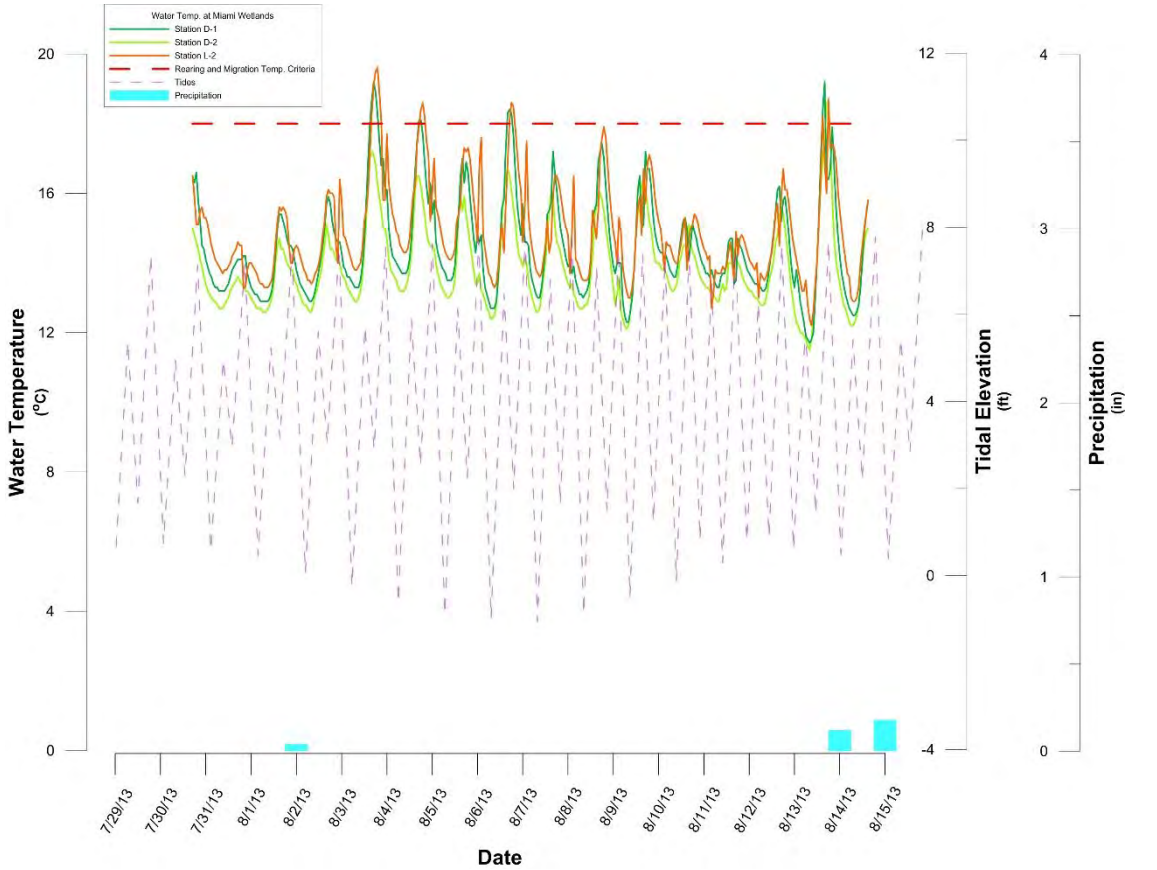
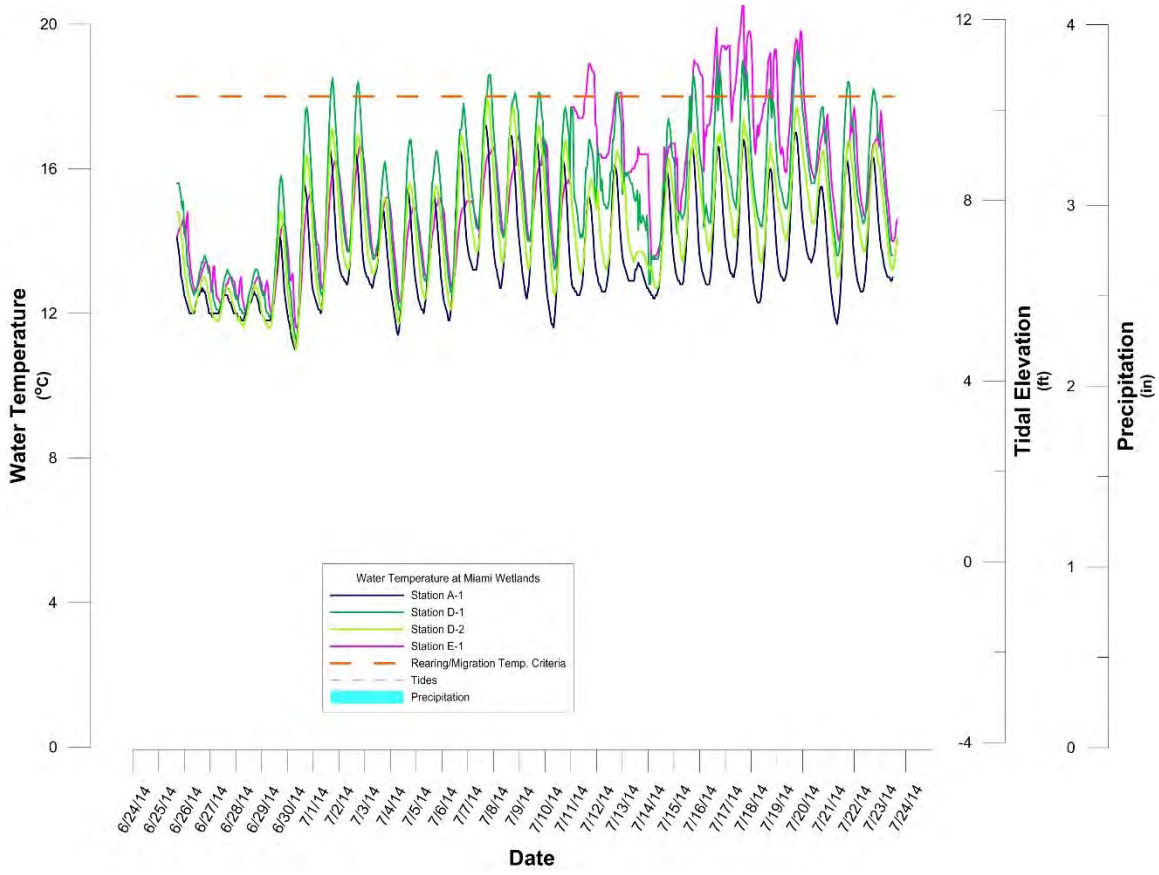


Figure C2. continued



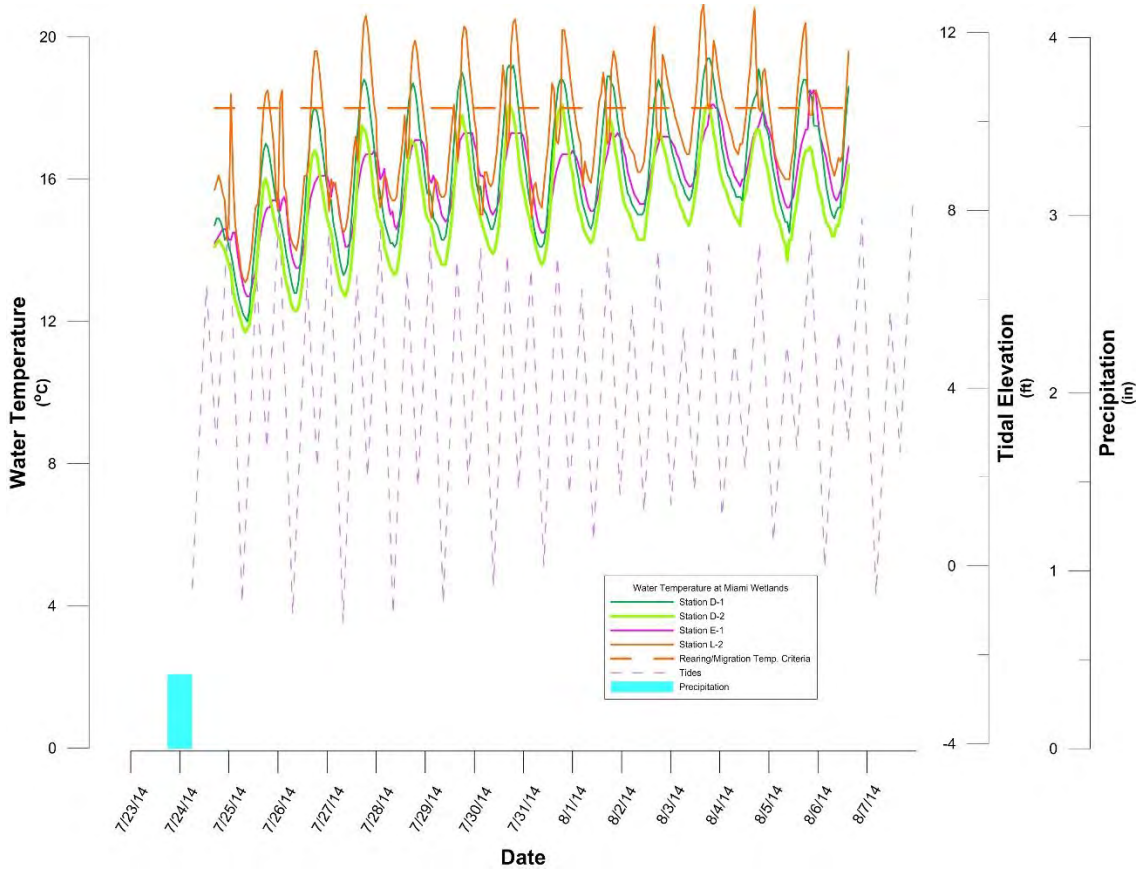
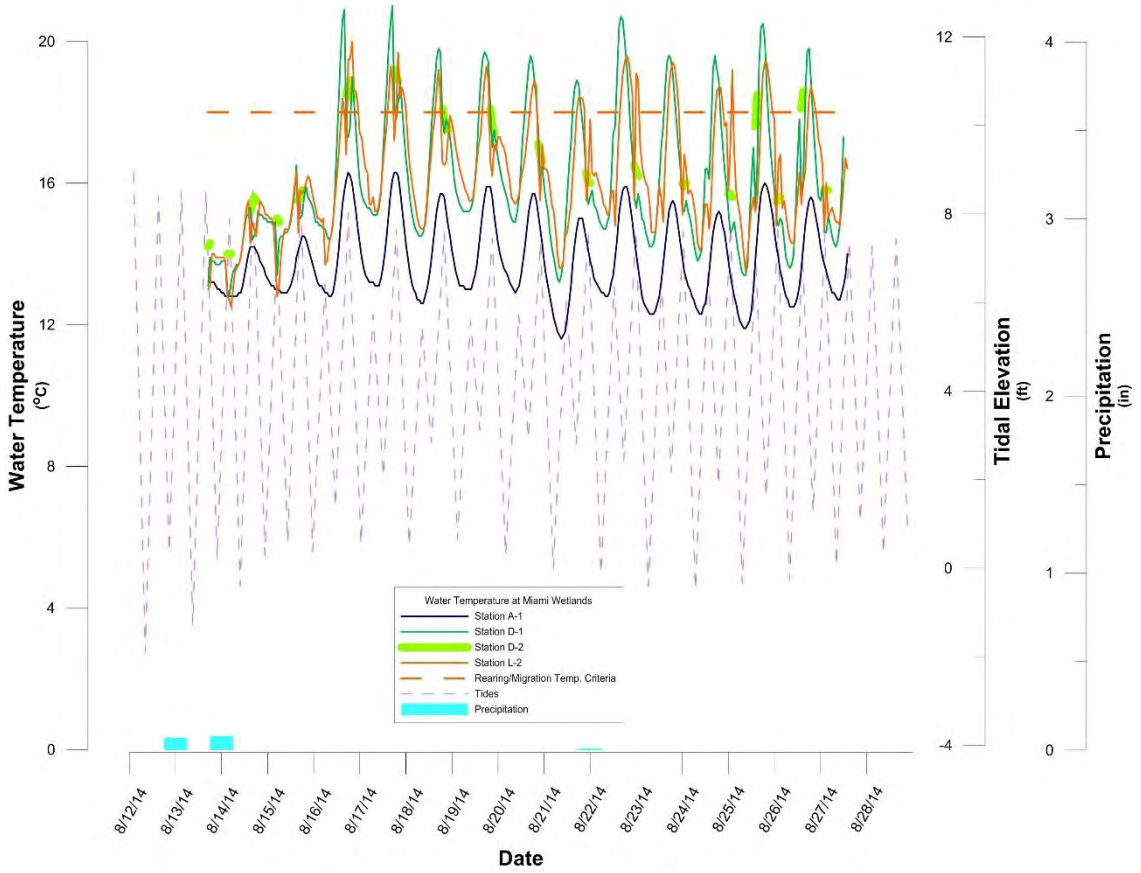


Figure C2. continued



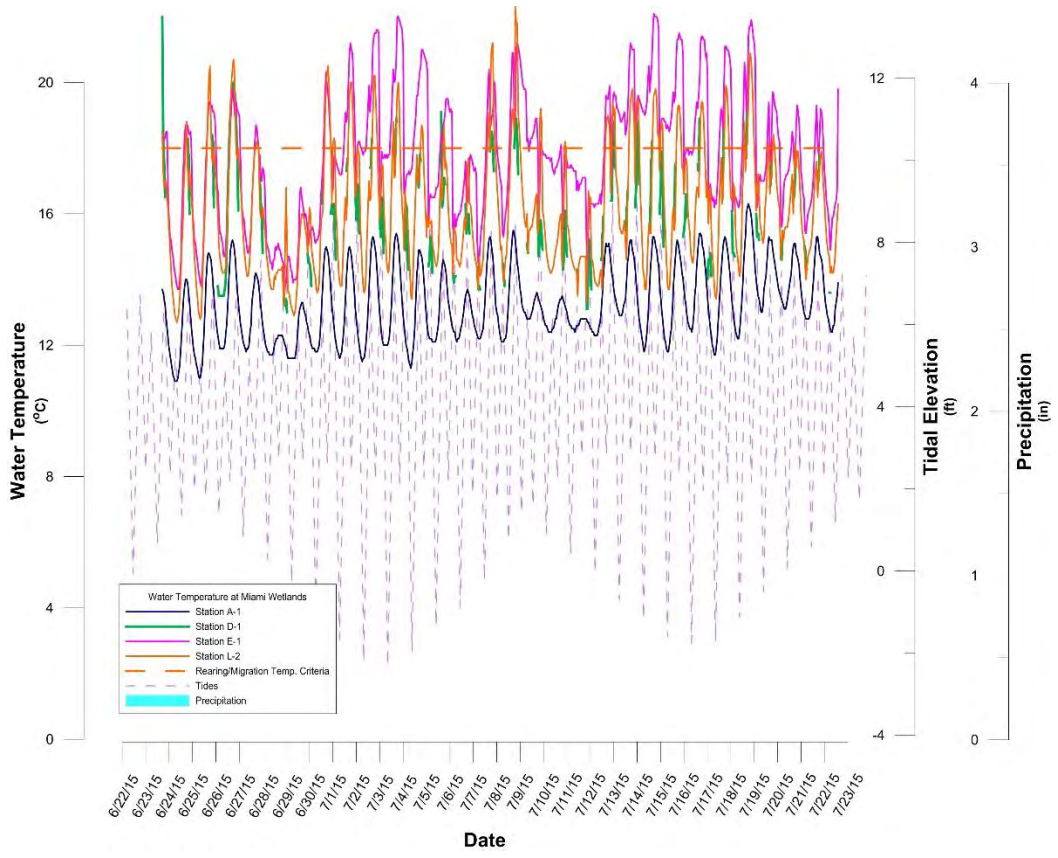
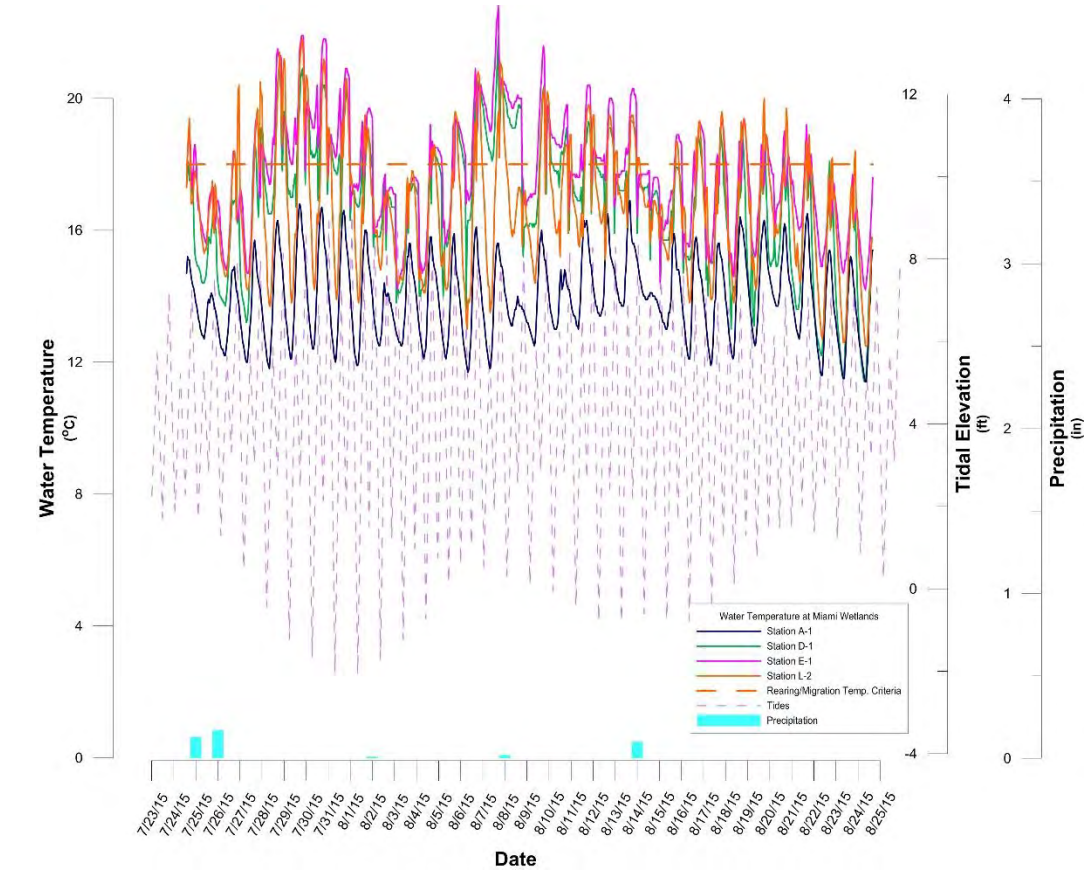


Figure C2. continued



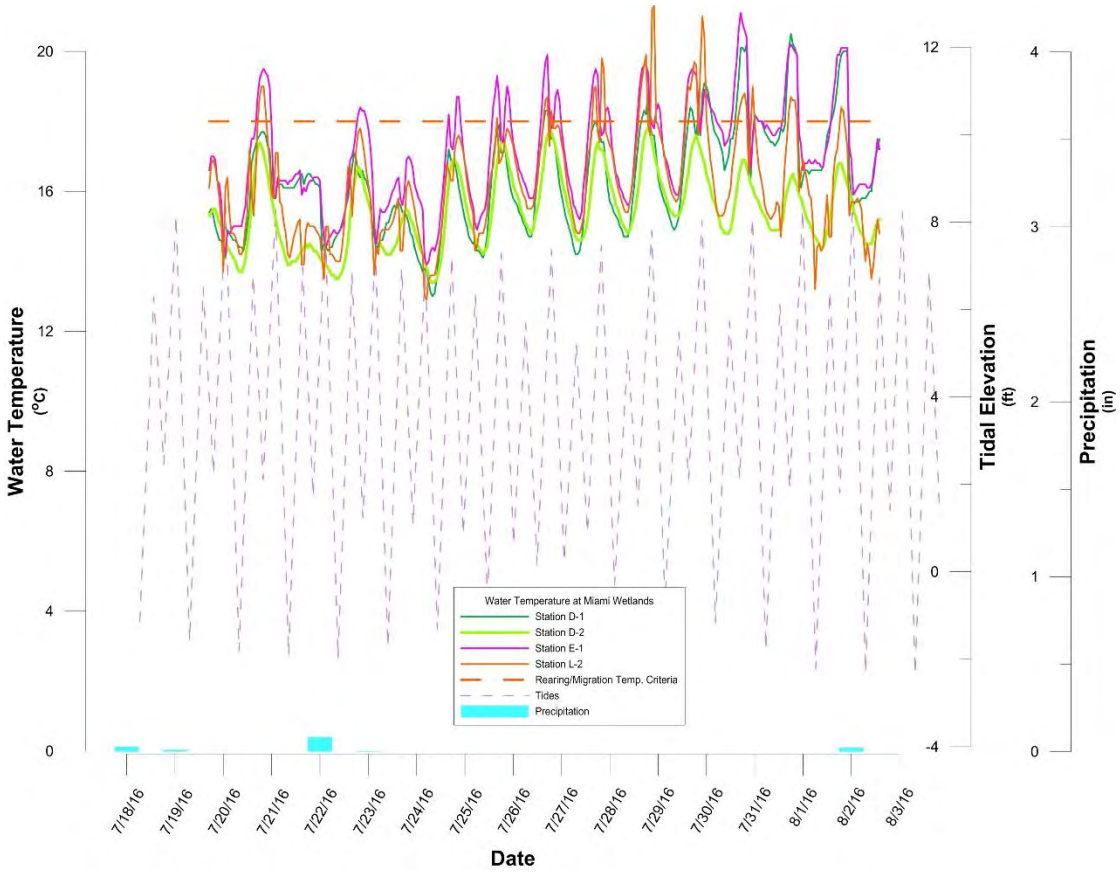


Figure C3. Graphs depicting post-restoration water temperatures in constructed channels at the Miami Wetlands during fall 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.

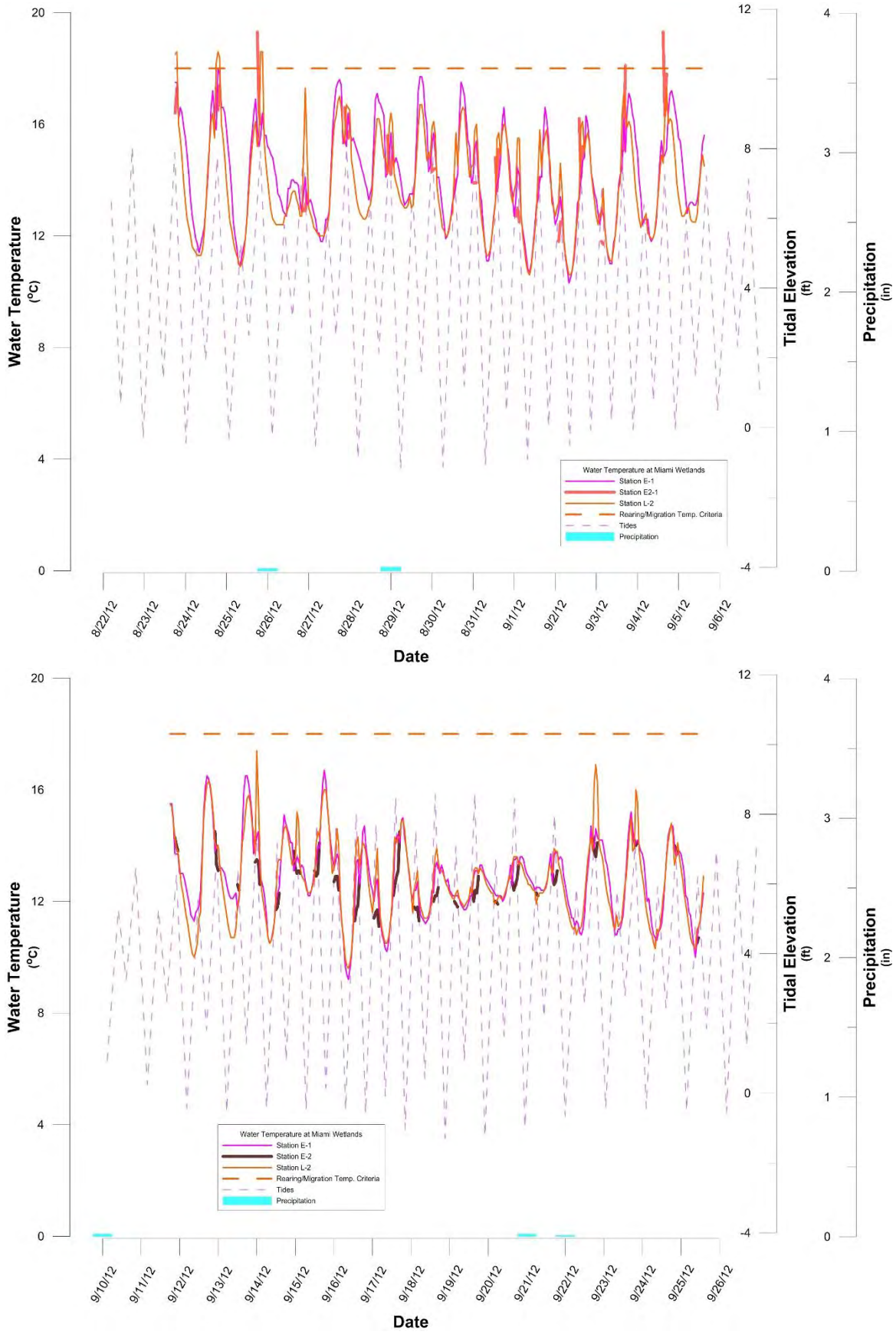
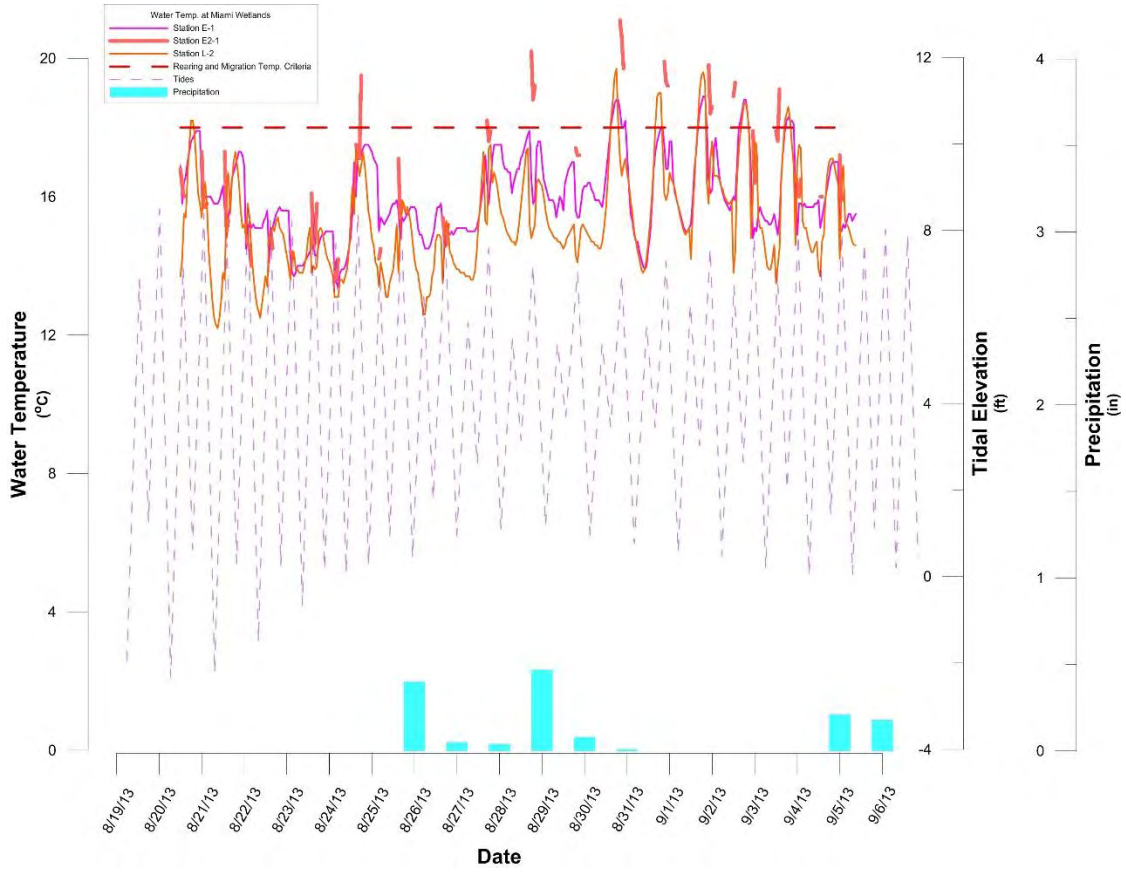


Figure C3. continued



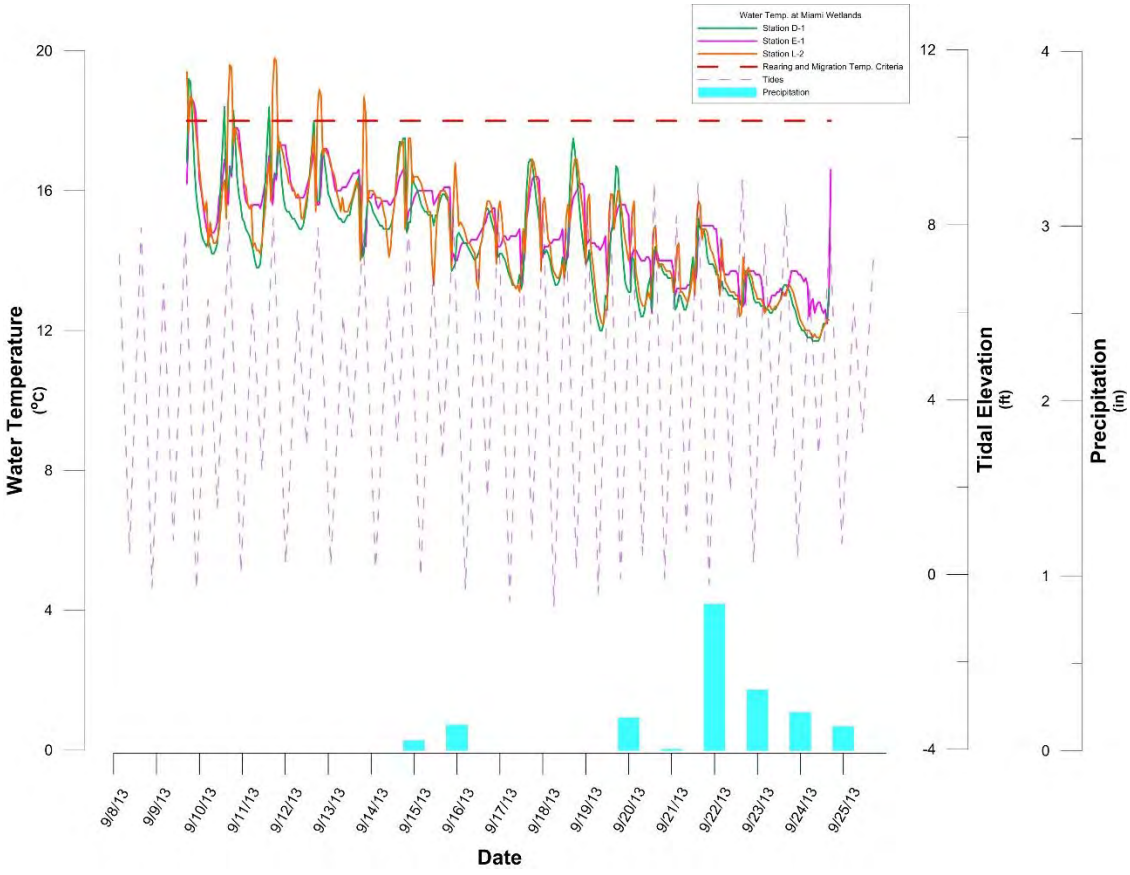
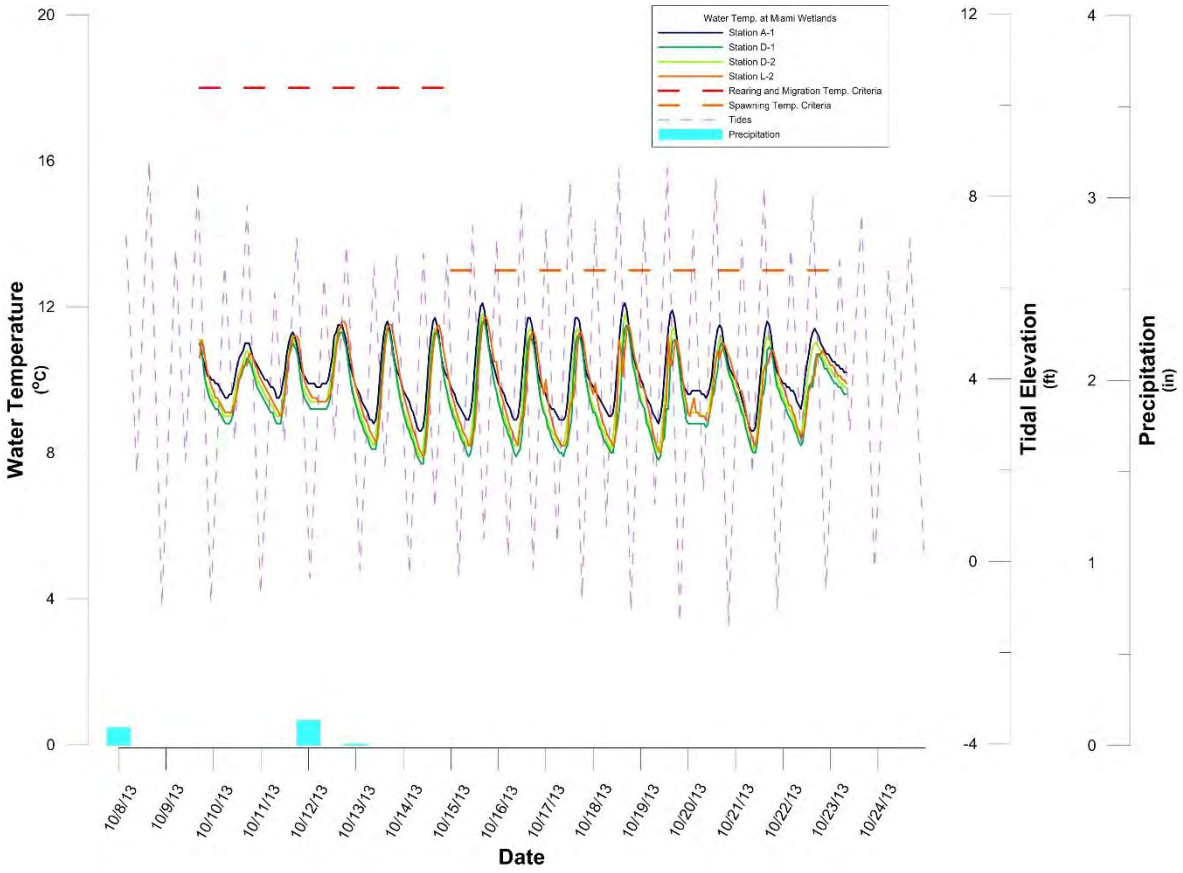


Figure C3. continued



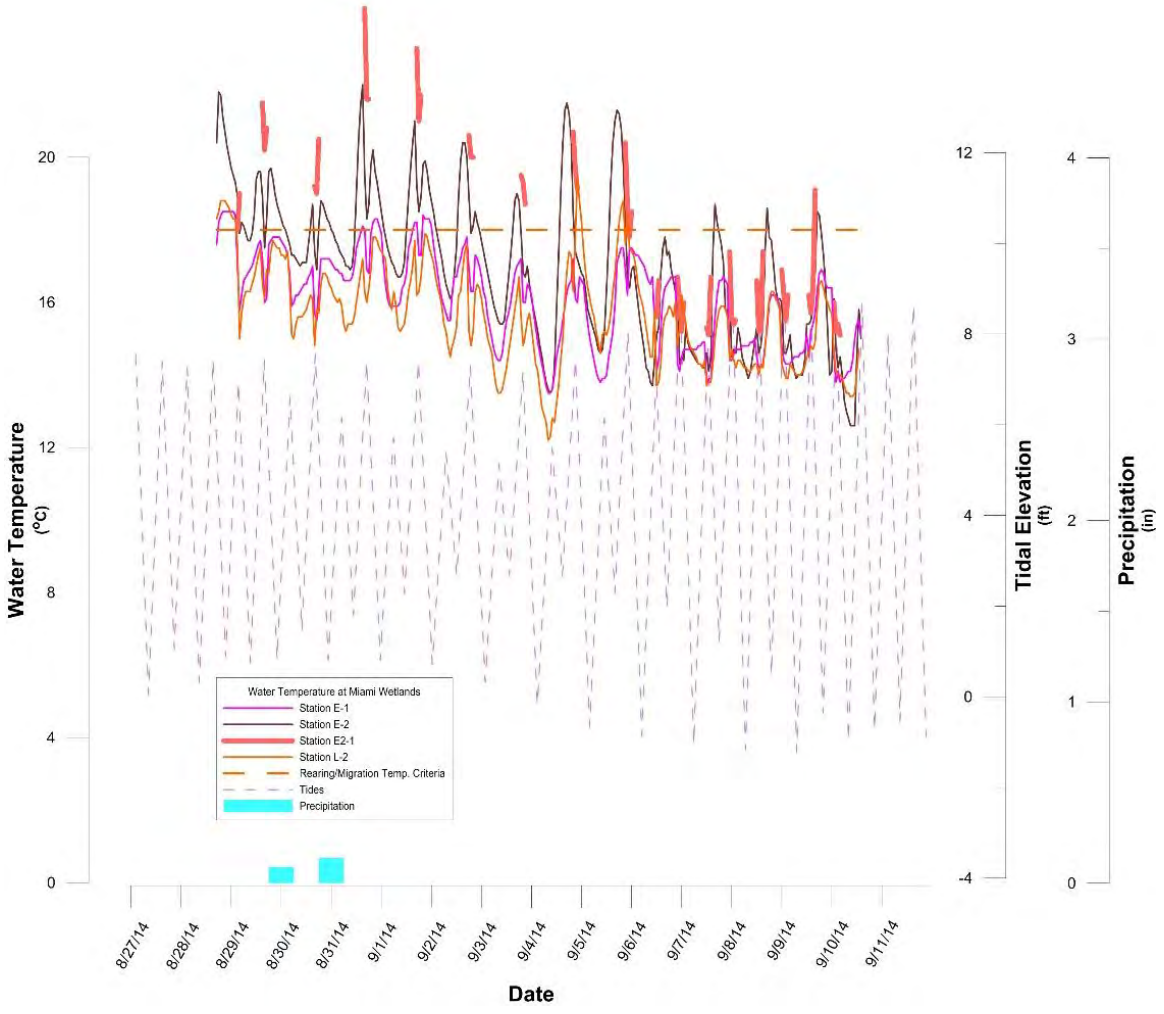
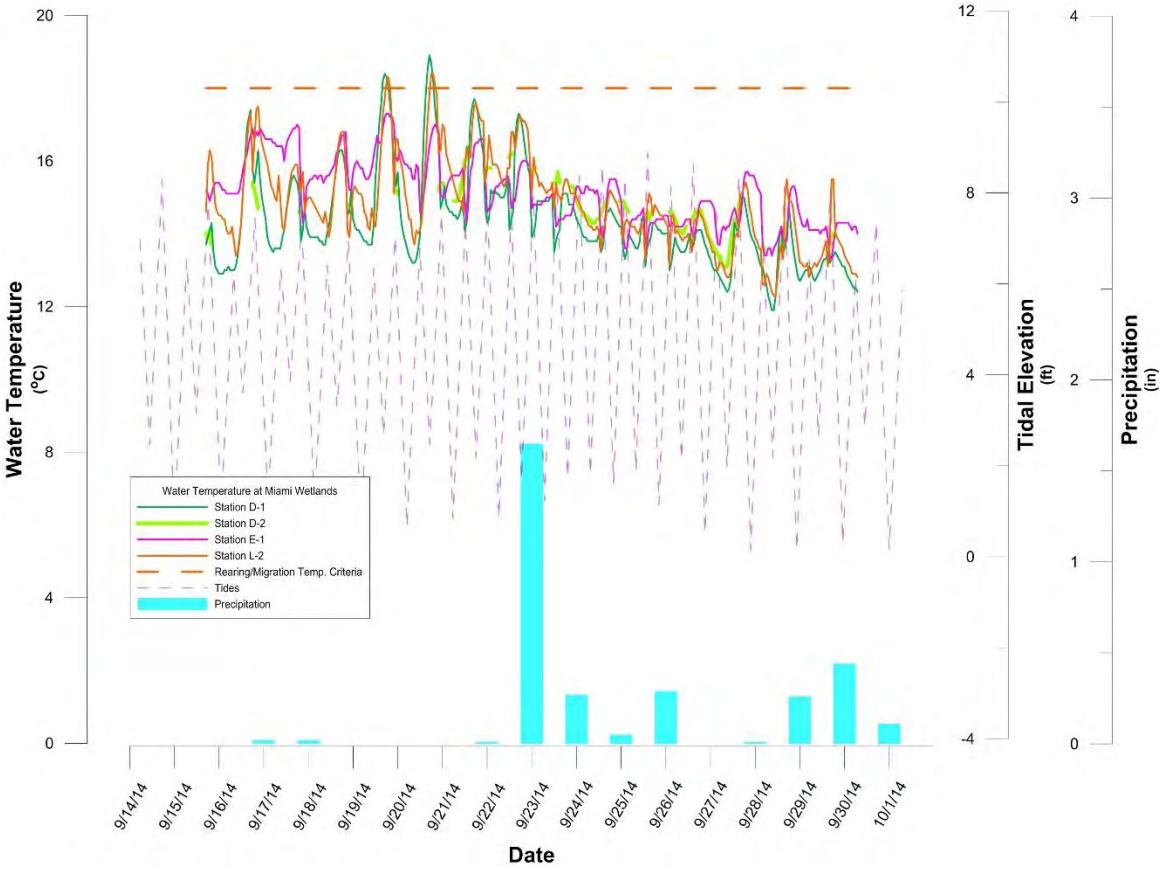


Figure C3. continued



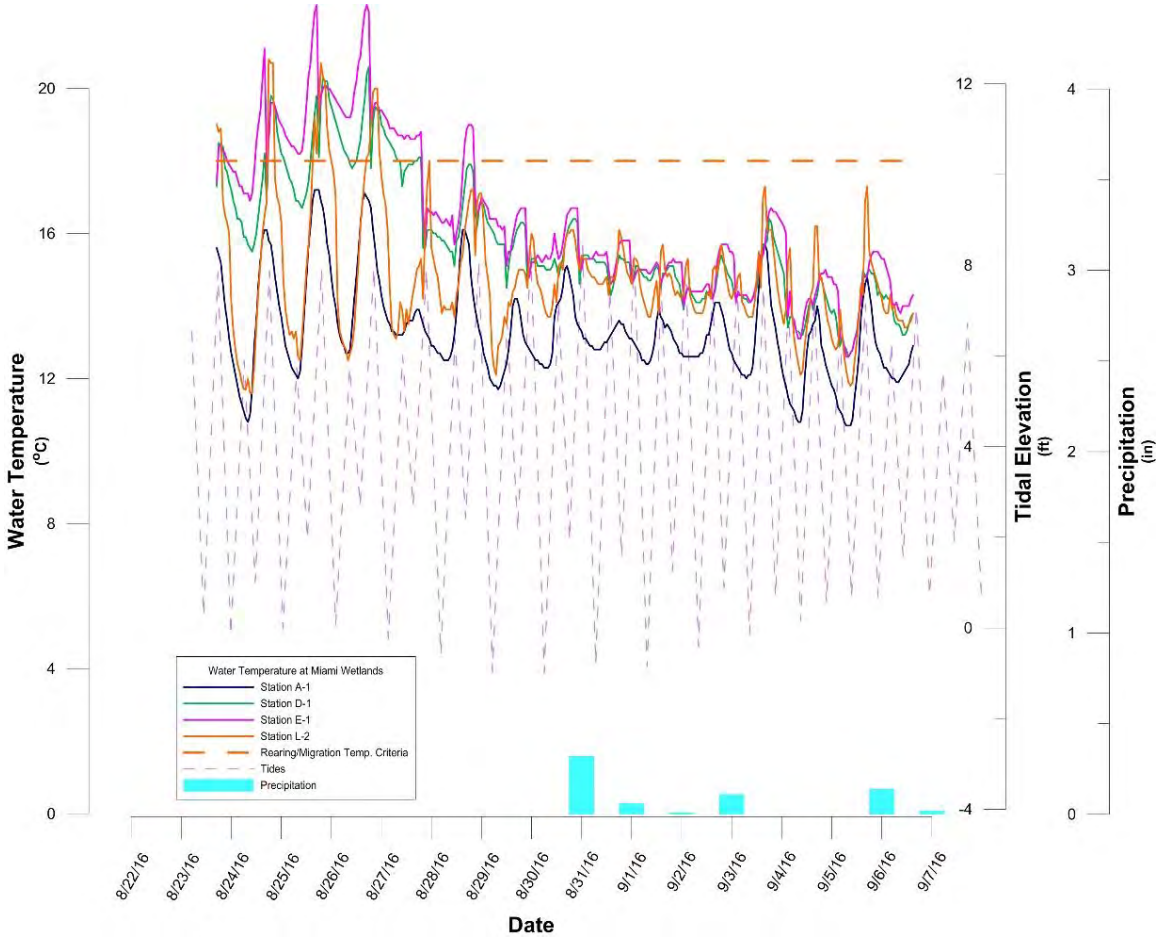
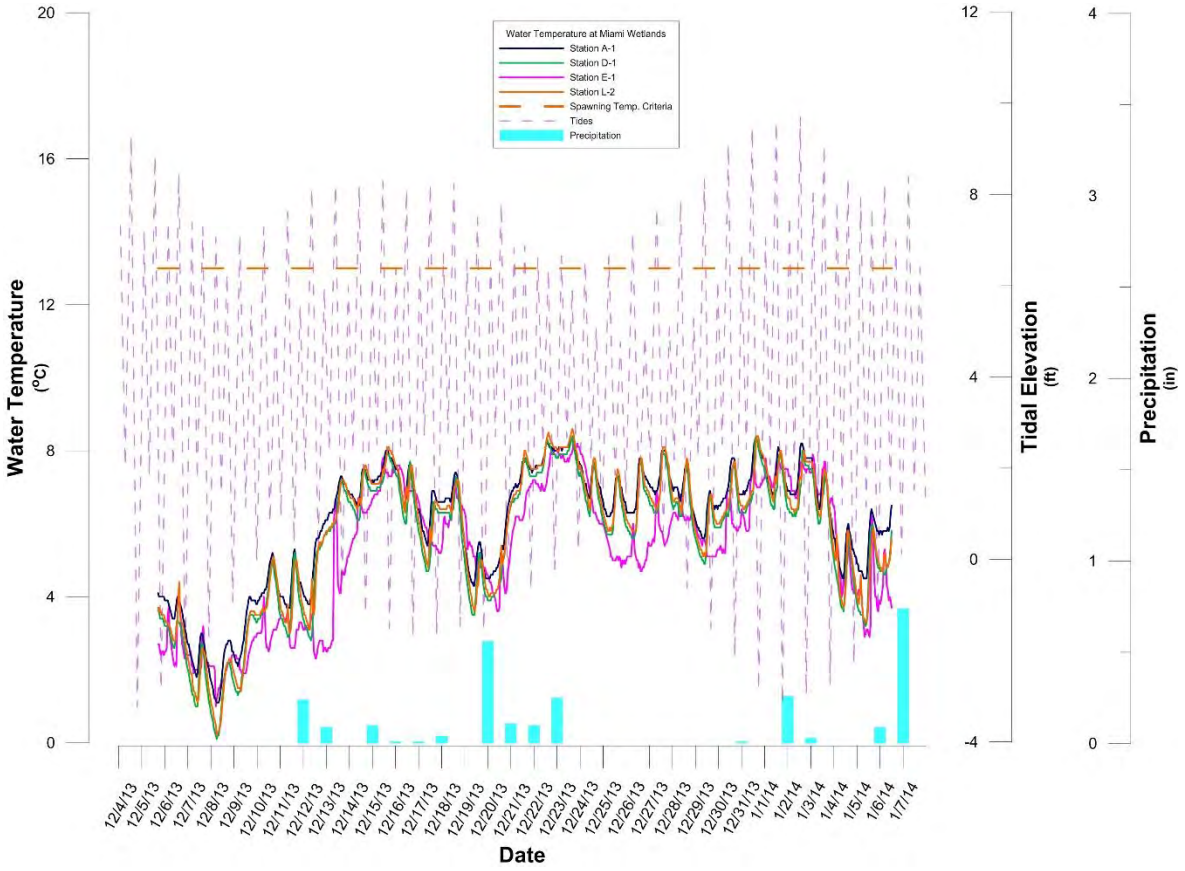
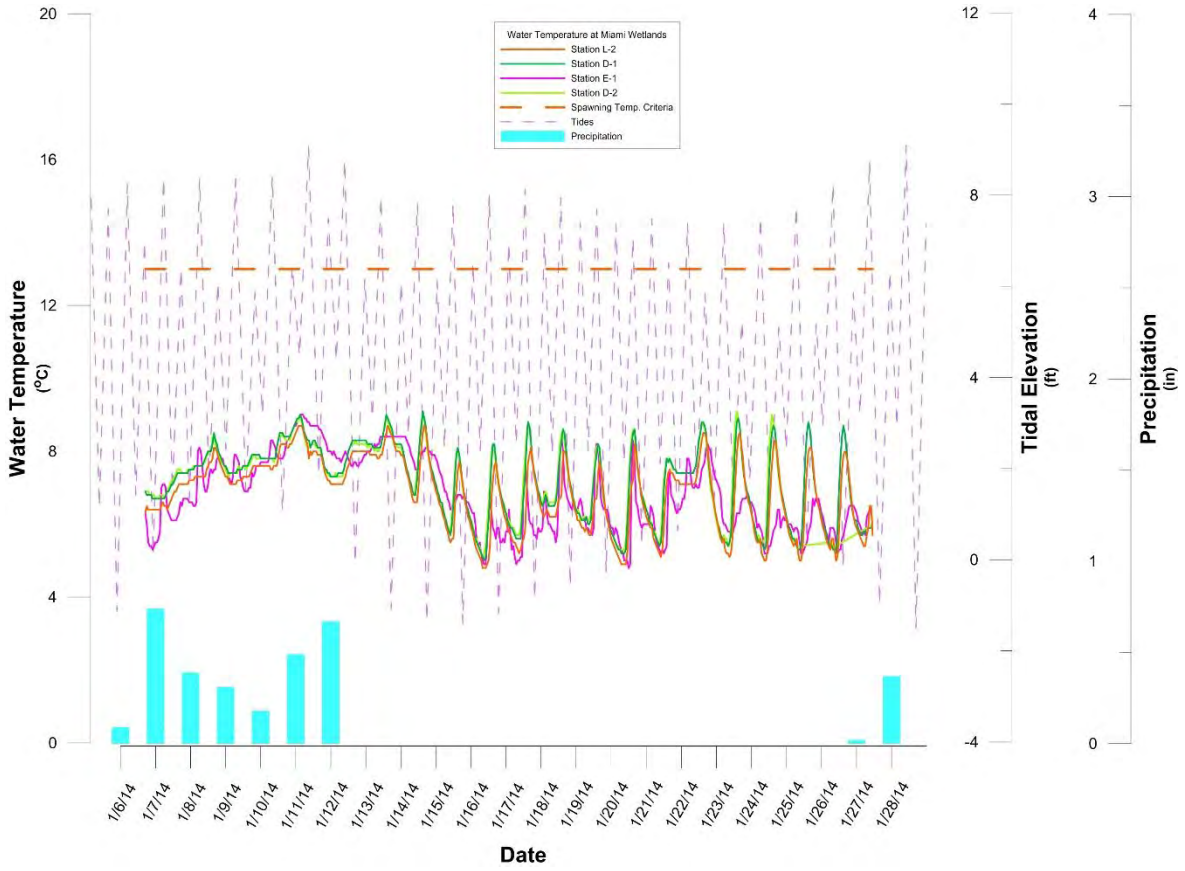


Figure C4. Graphs depicting post-restoration water temperatures in constructed channels at the Miami Wetlands during winter 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.





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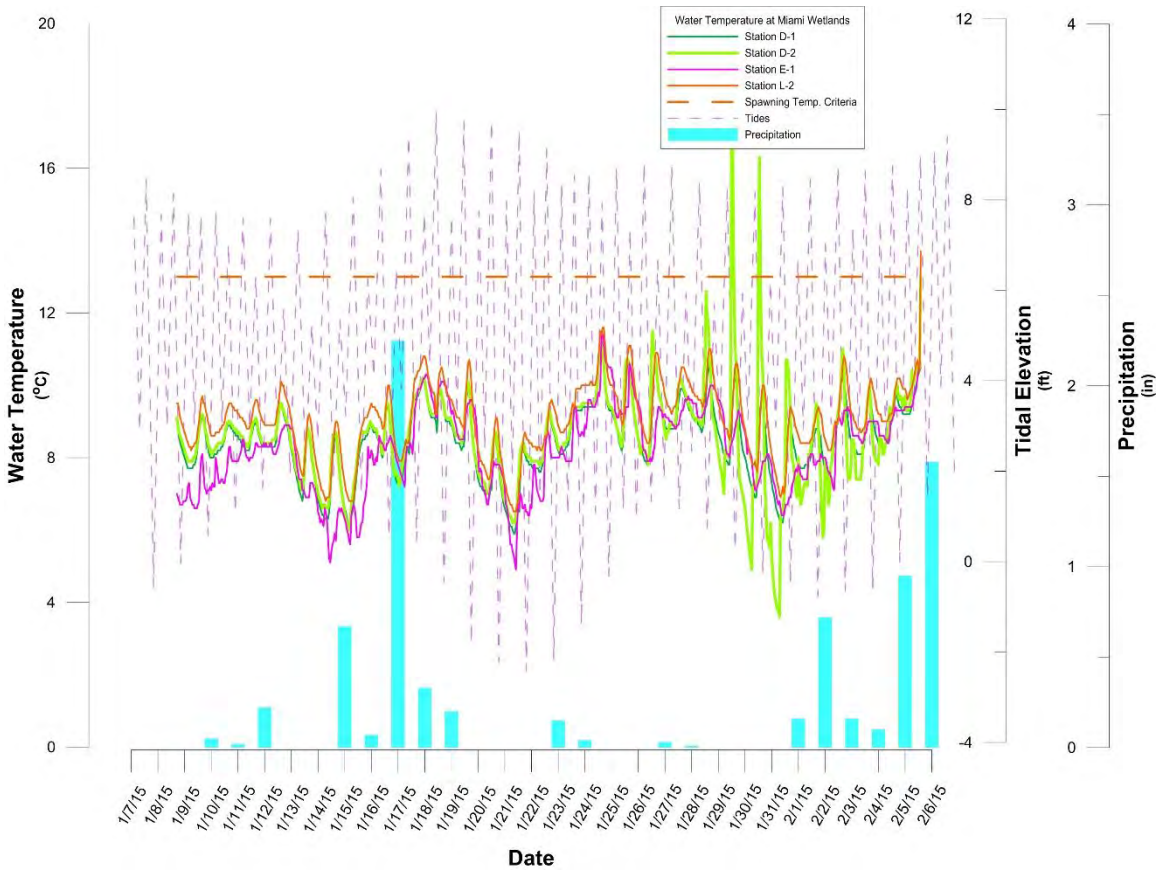
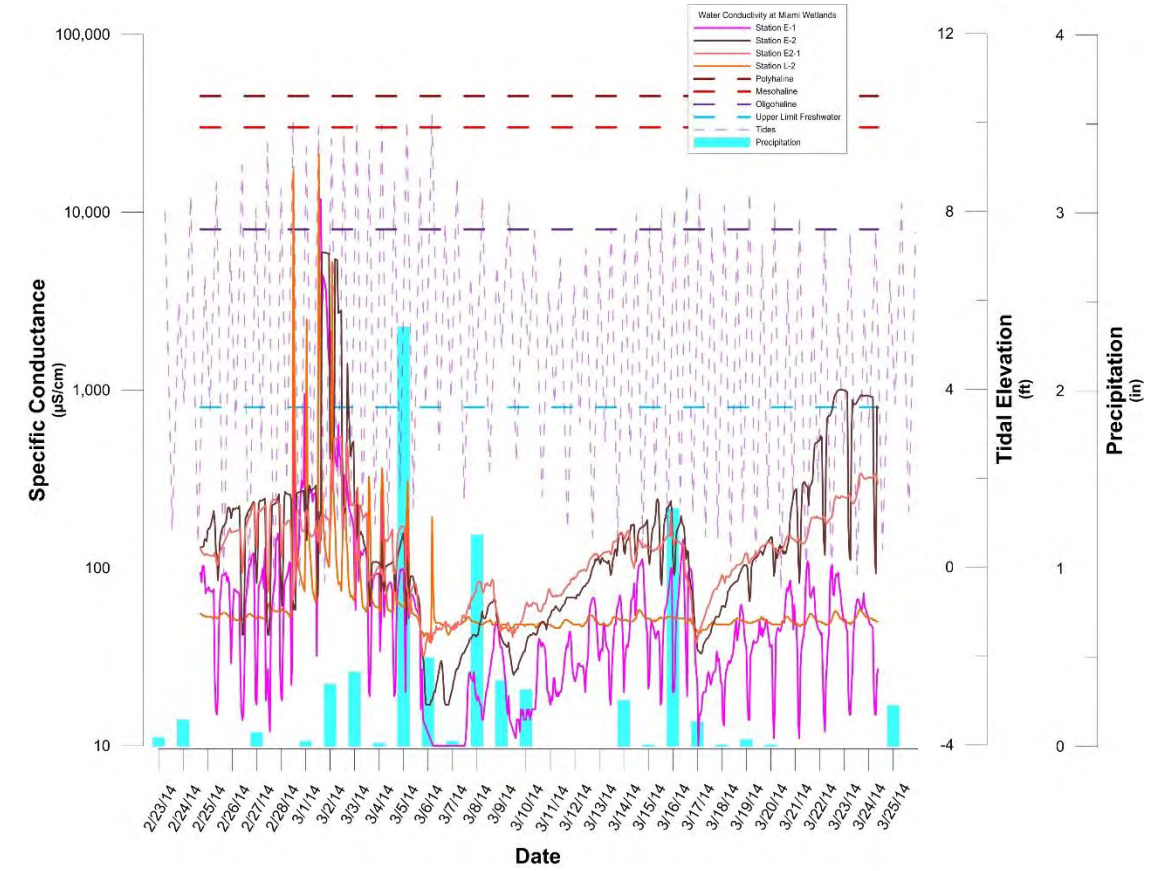


Appendix D

Graphs depicting post-restoration specific conductance levels for water in constructed channels at the Miami Wetlands

Figure D1. Graphs depicting post-restoration specific conductance levels in constructed channels at the Miami Wetlands during spring 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.



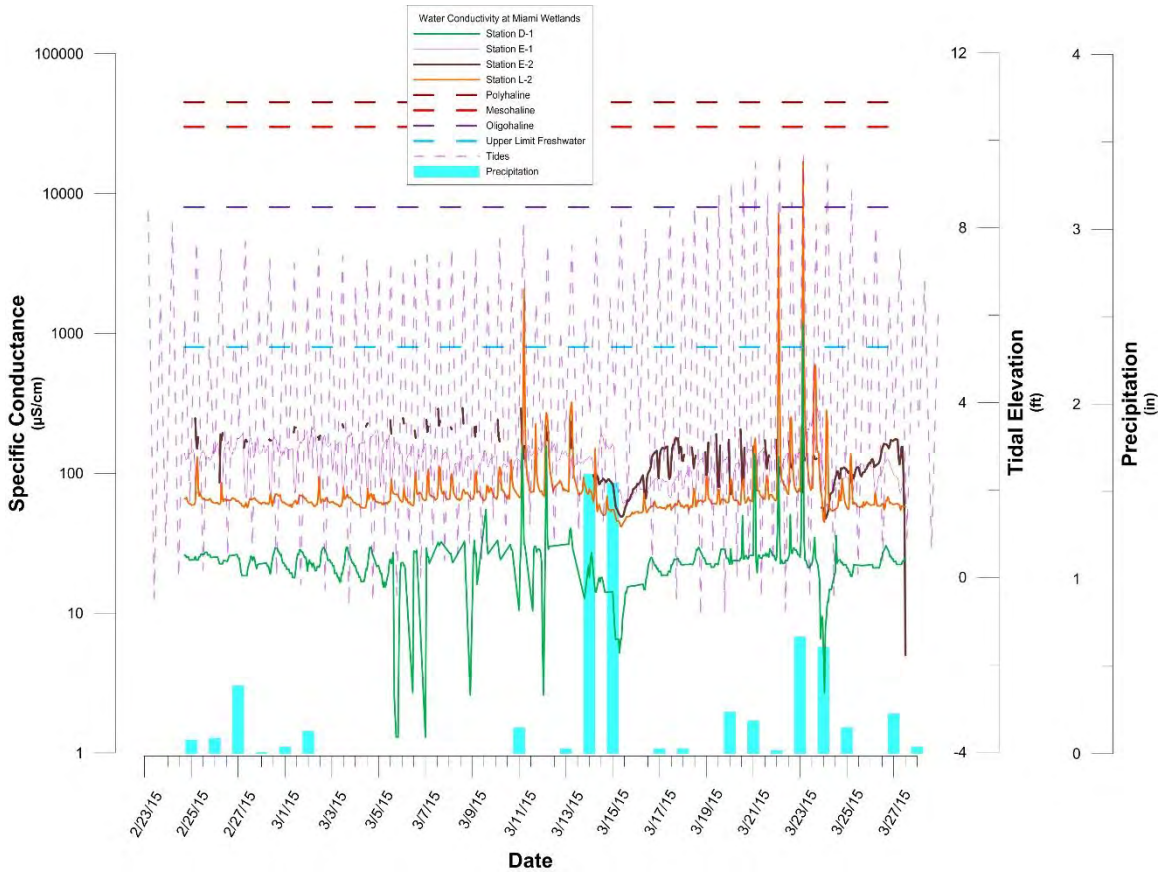


Figure D1. continued

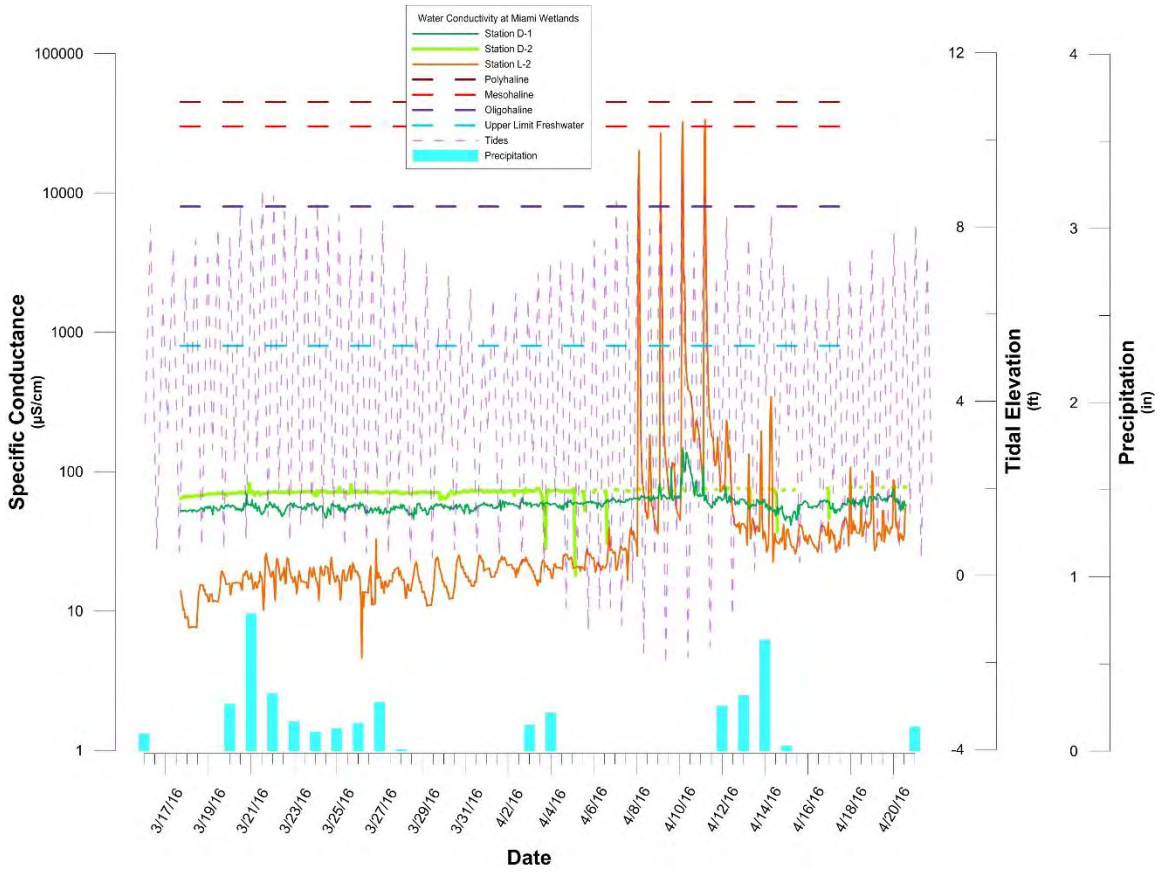
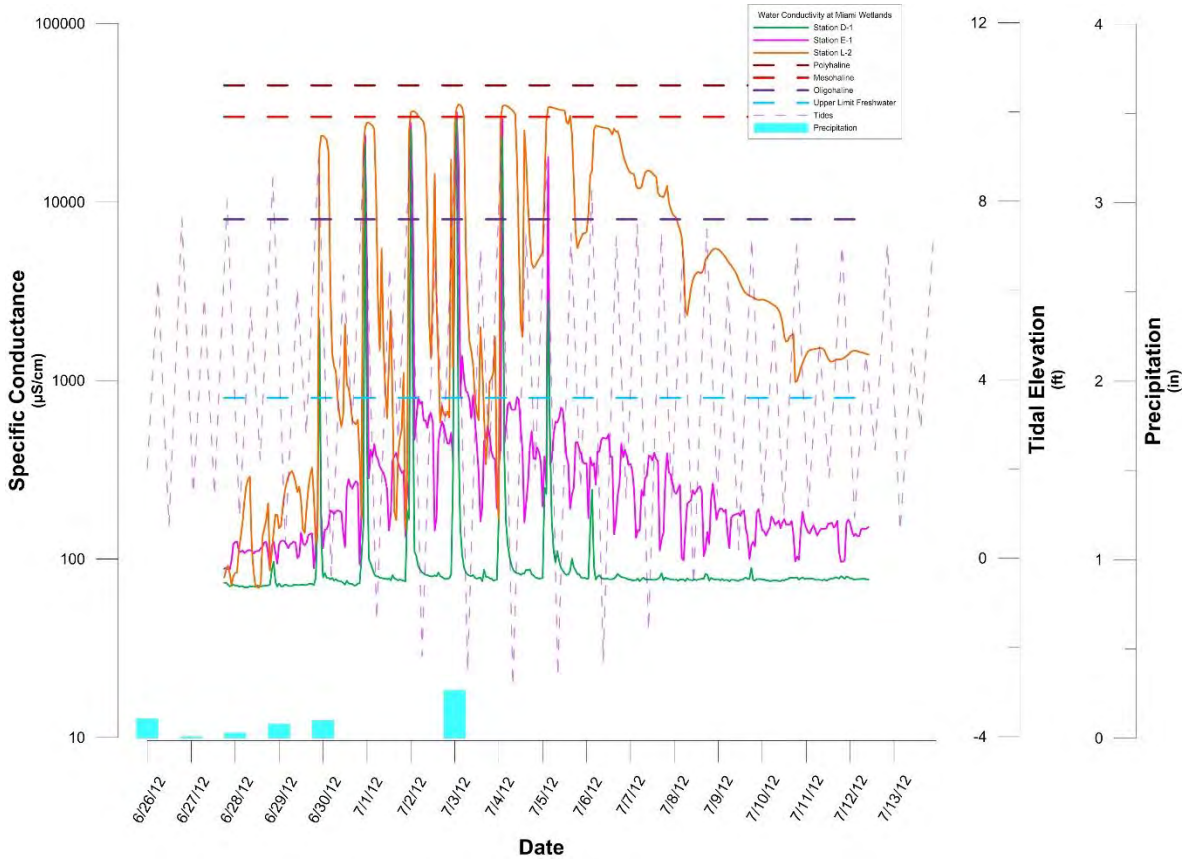
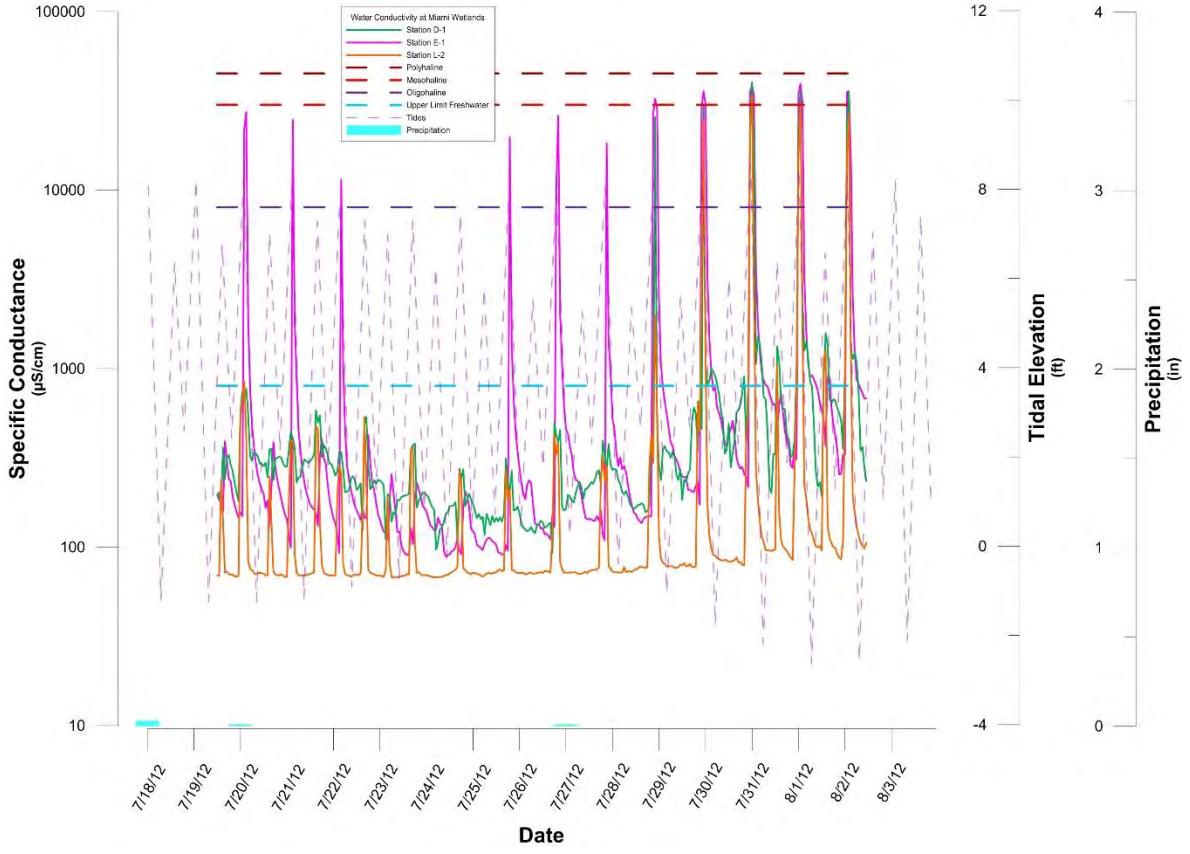


Figure D2. Graphs depicting post-restoration specific conductance levels in constructed channels at the Miami Wetlands during summer 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.





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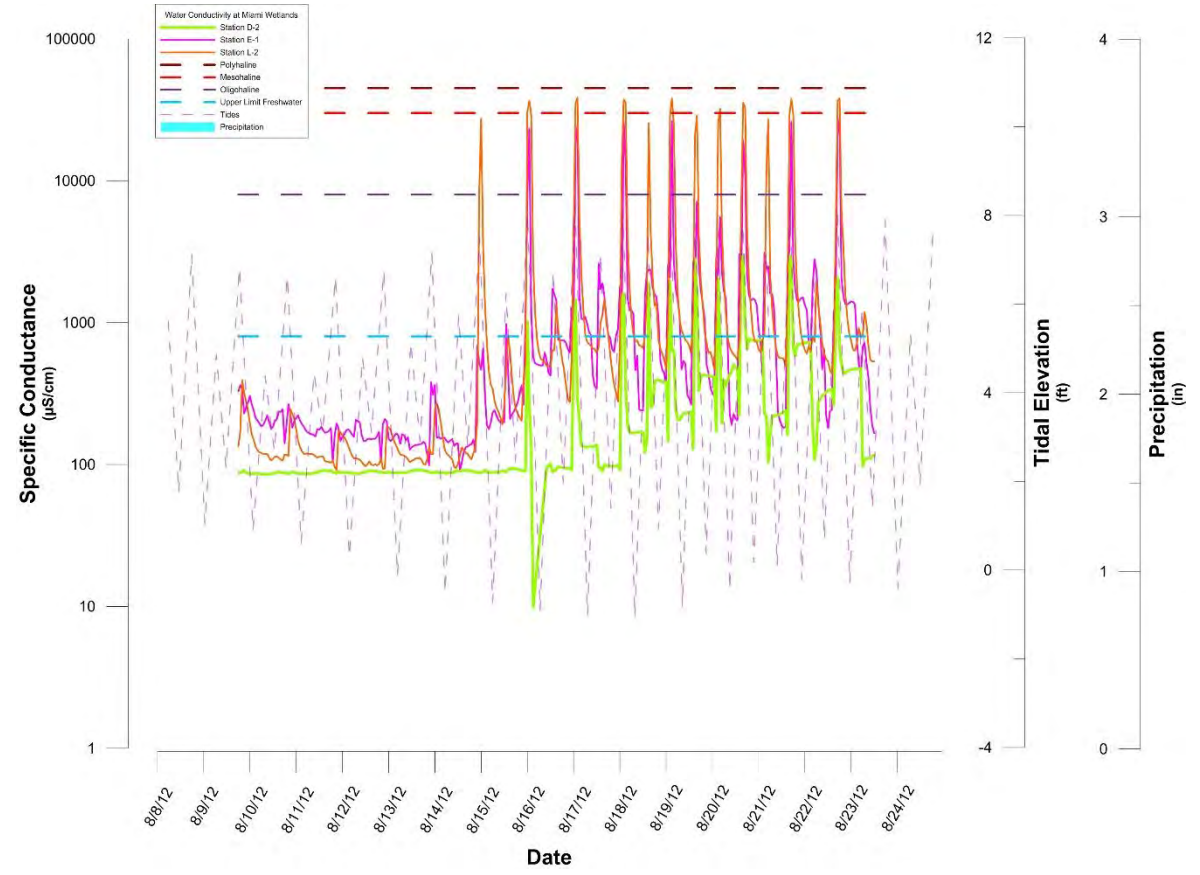

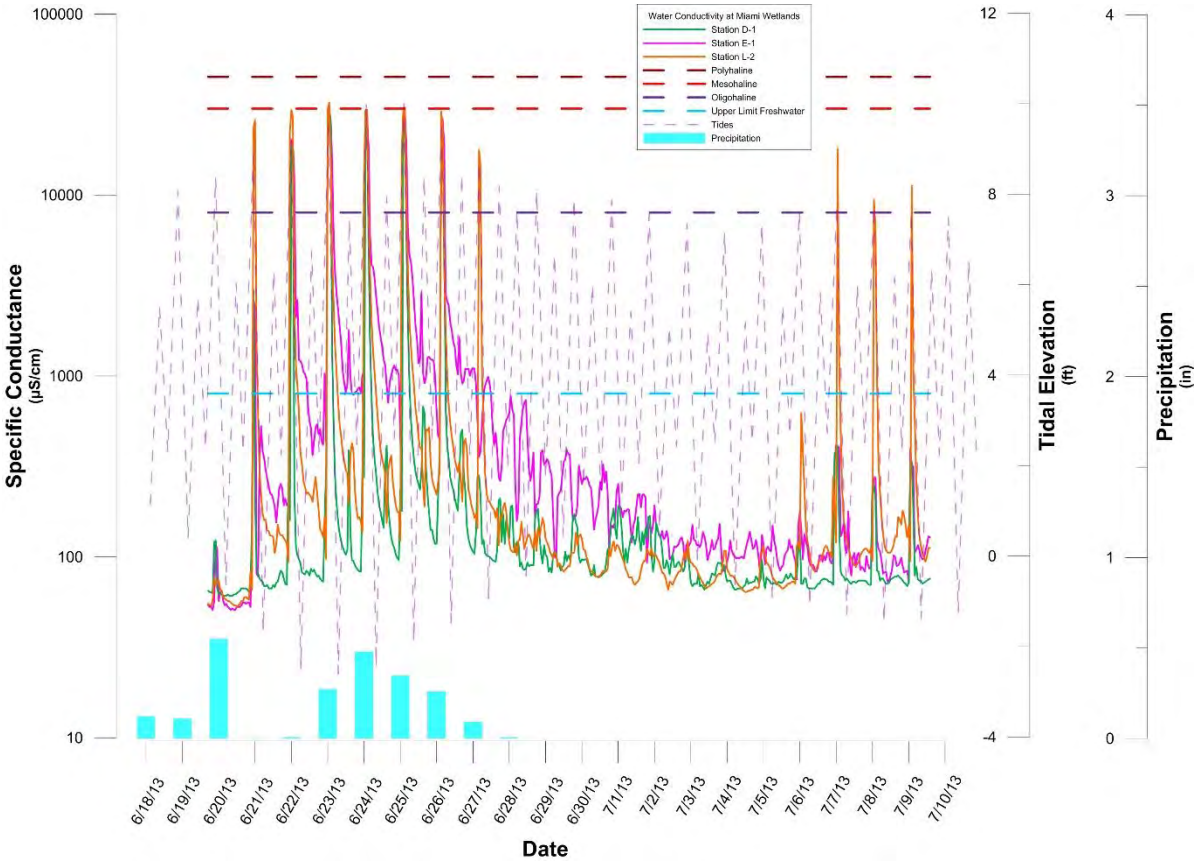

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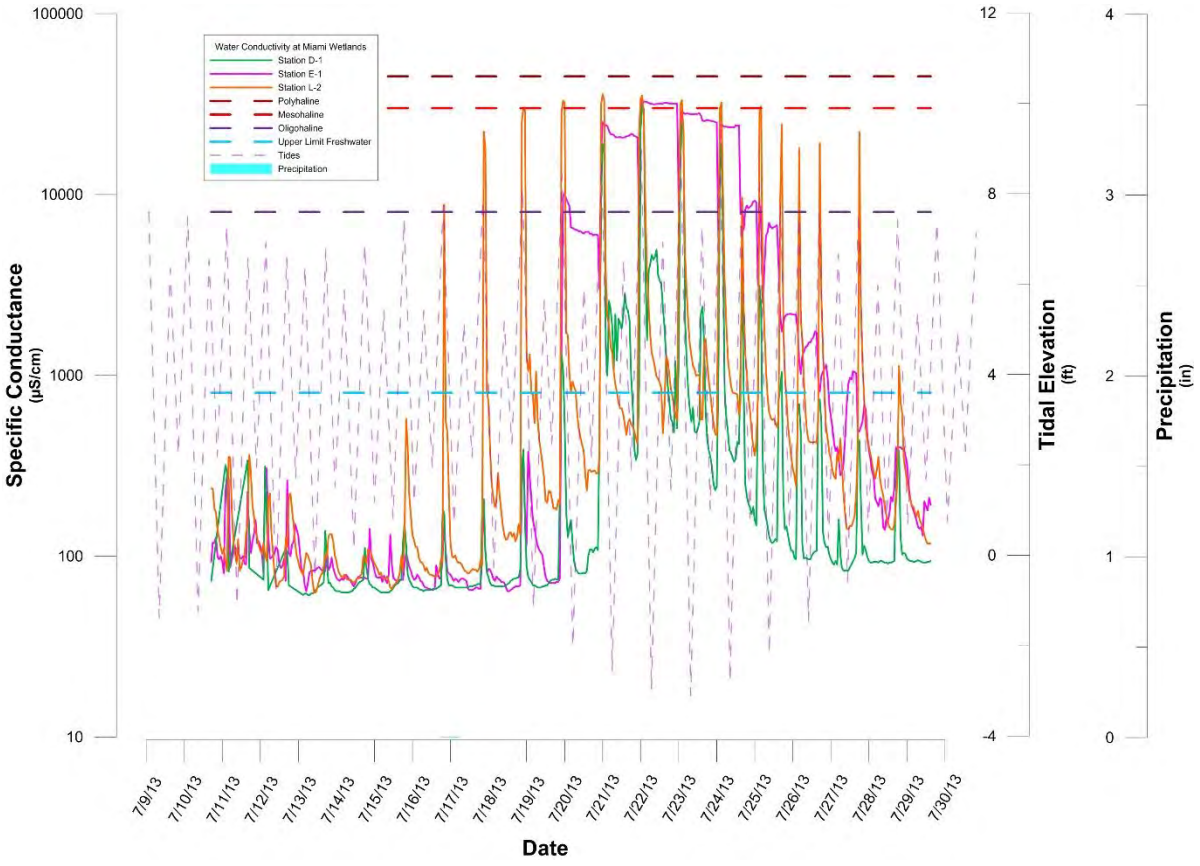

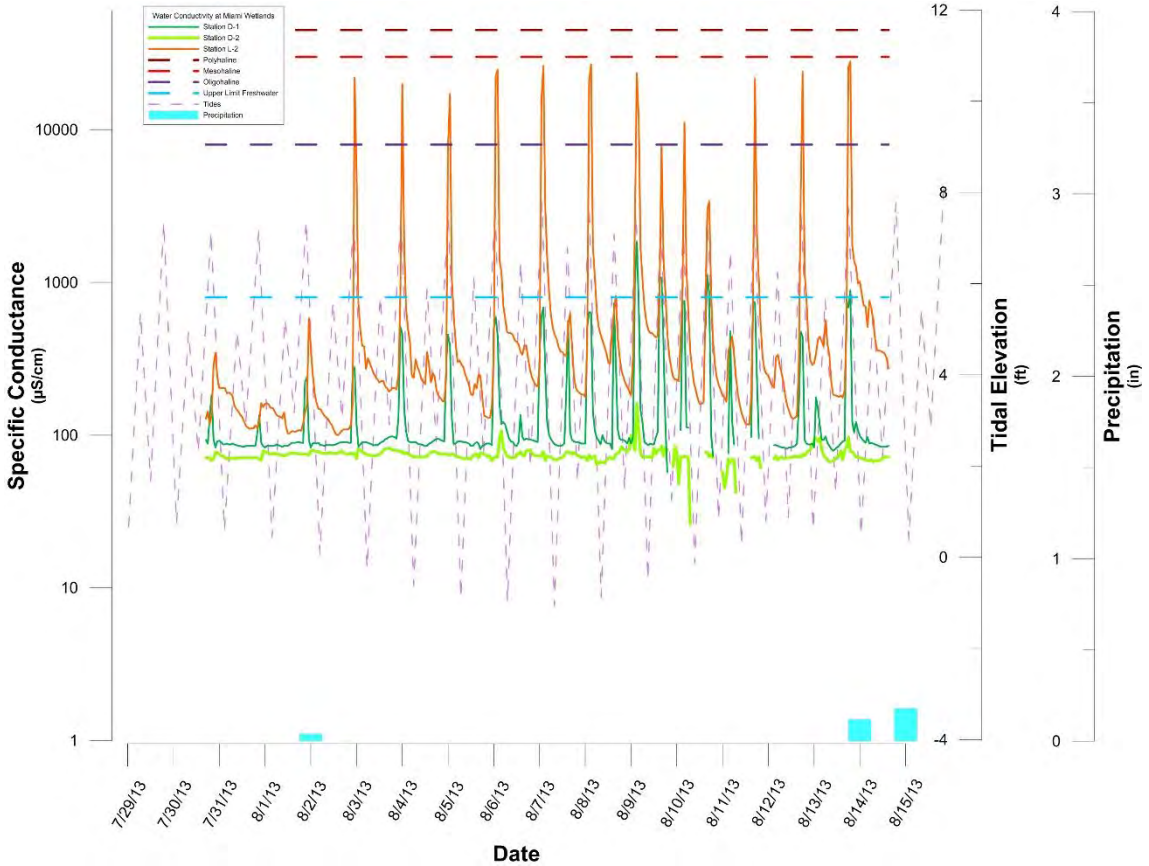

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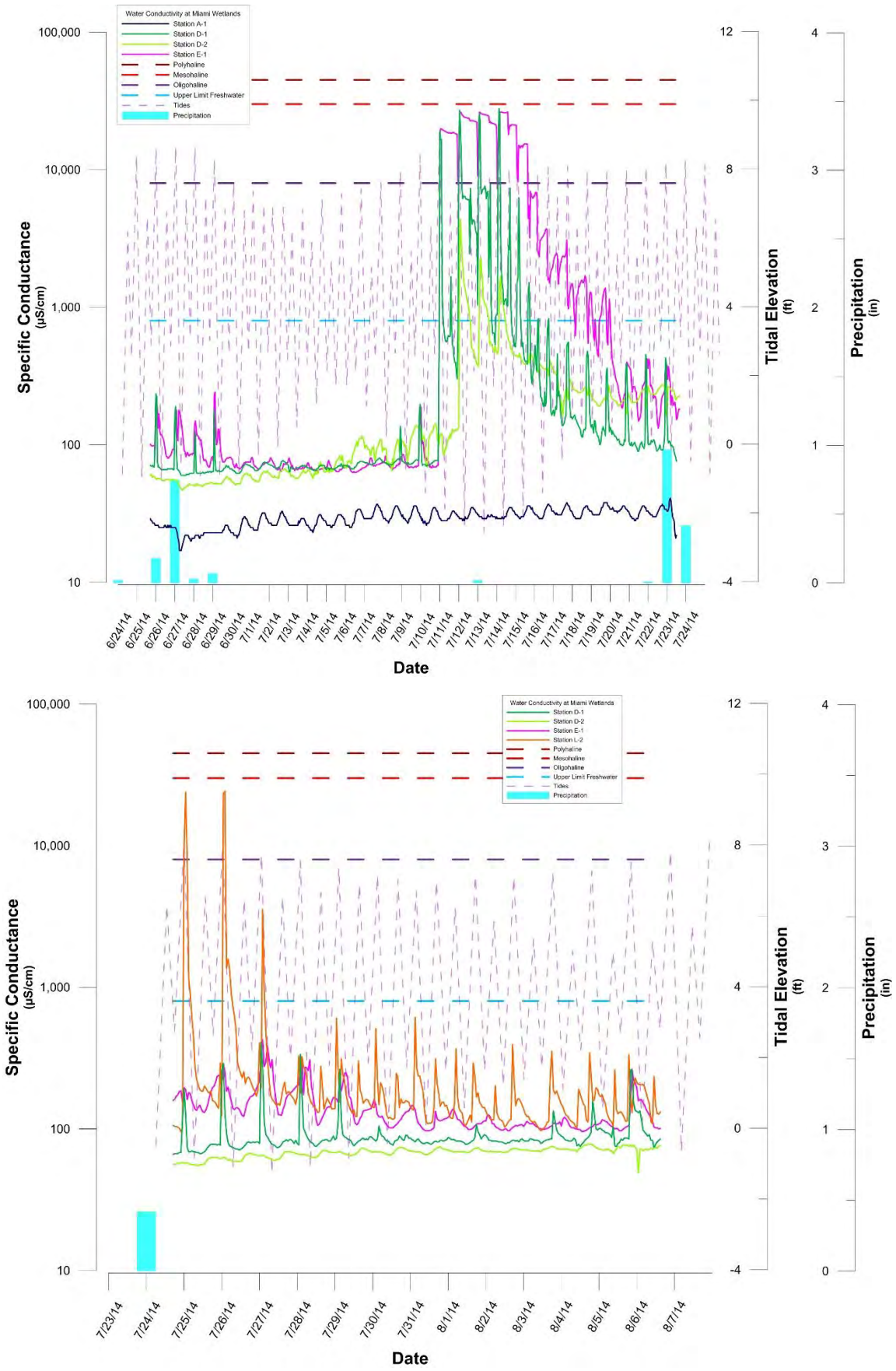

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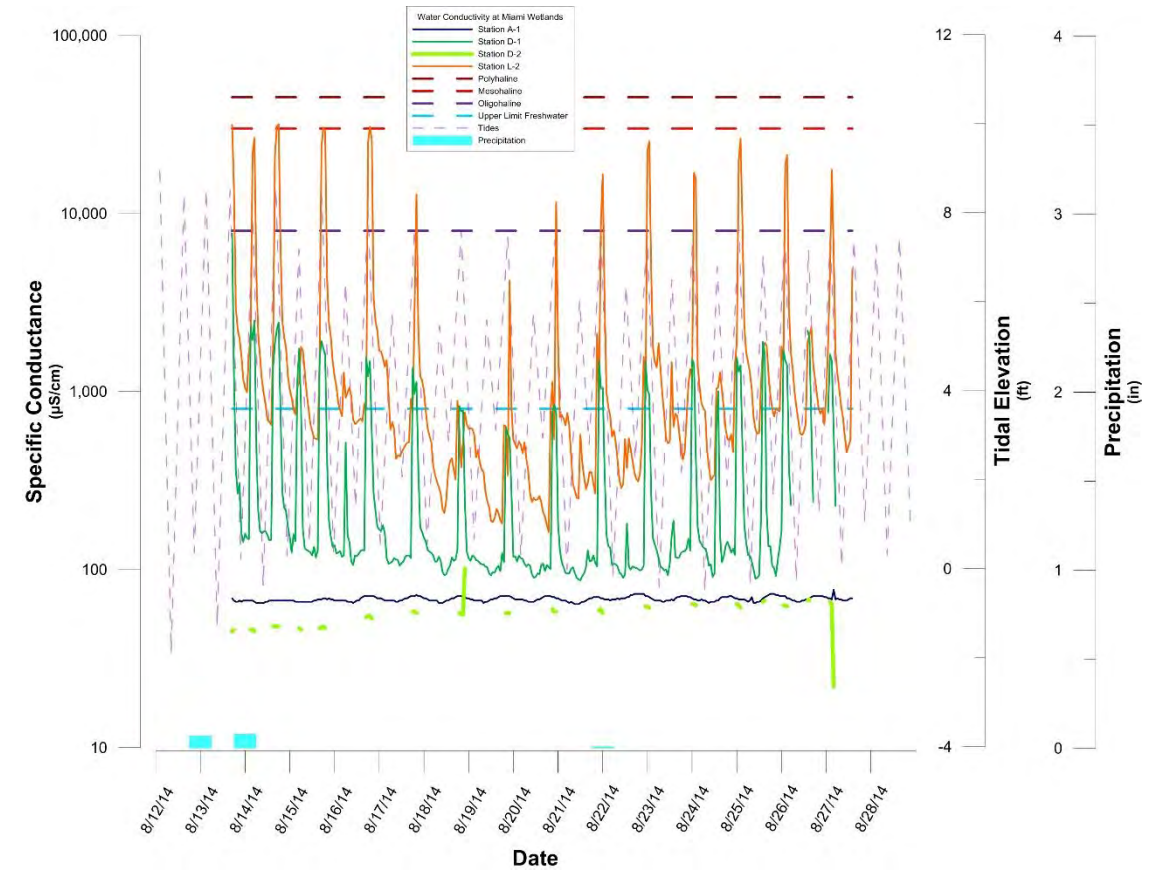


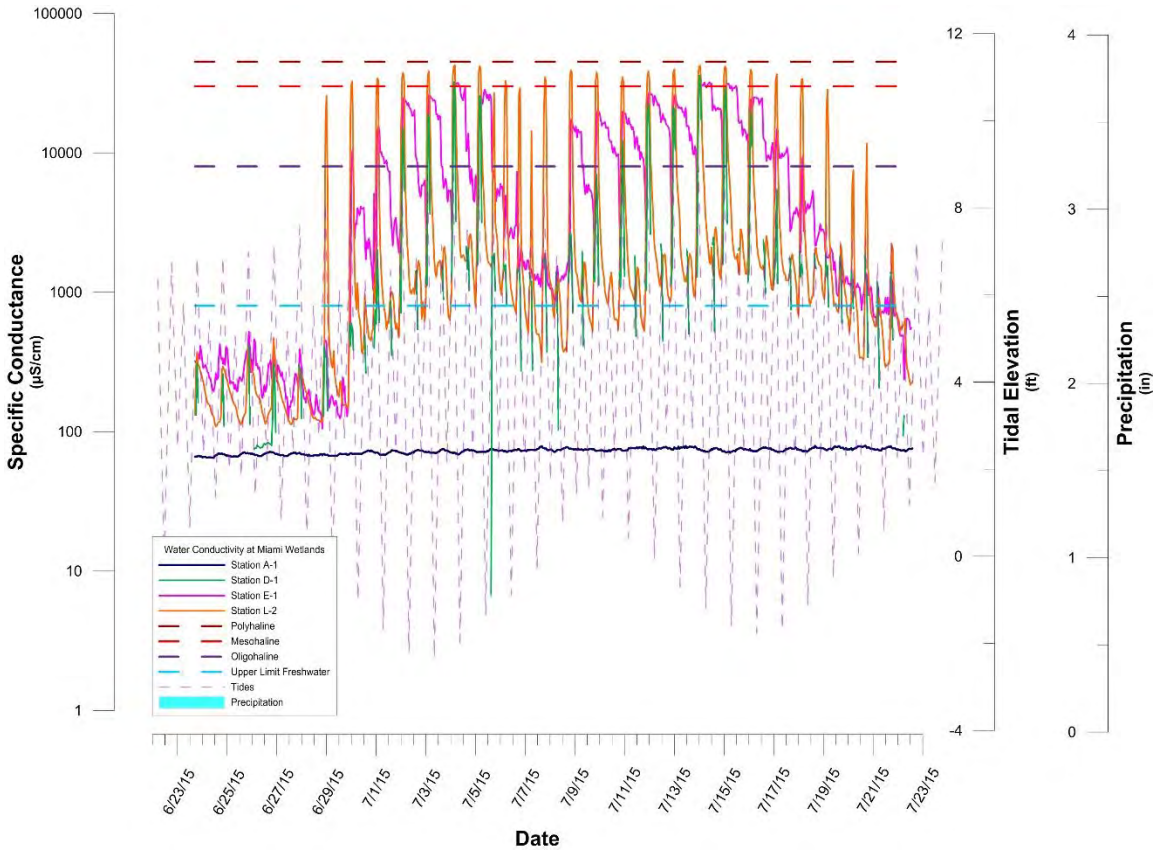
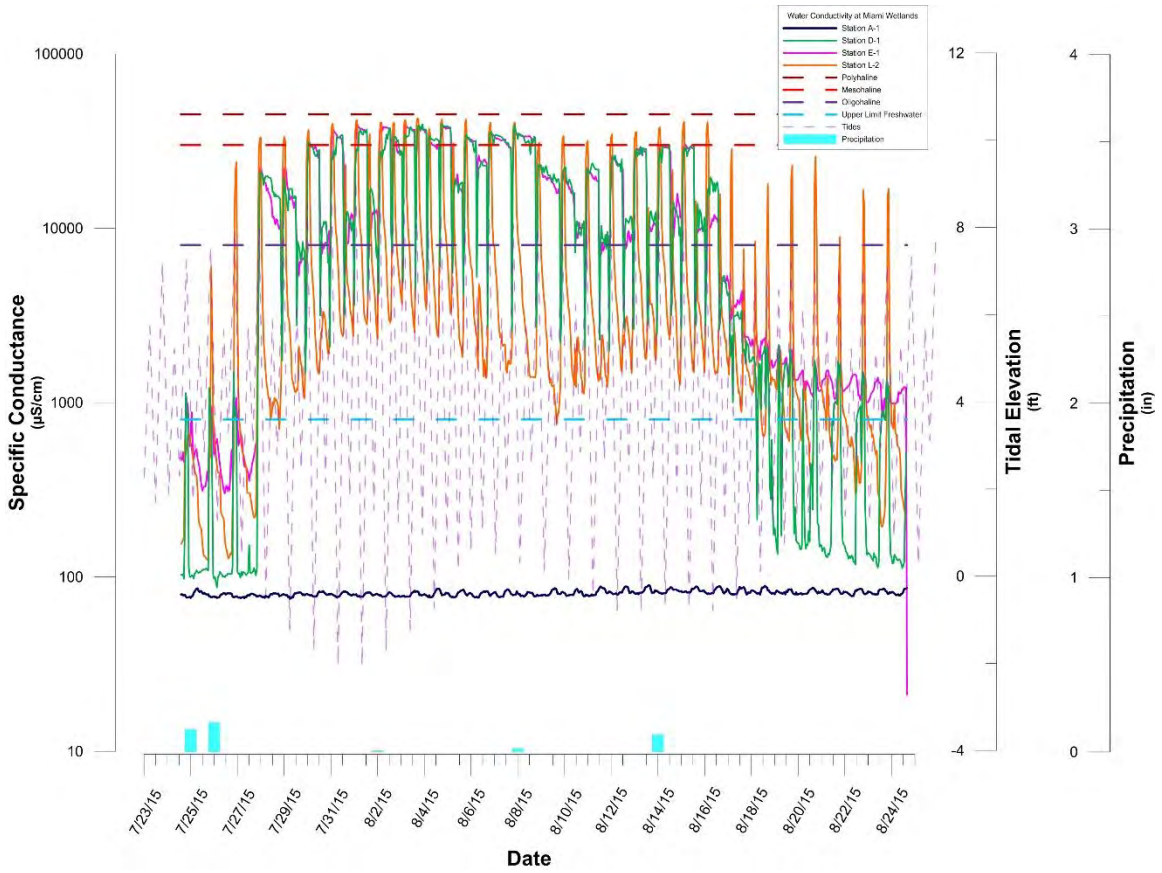


Figure D2. continued



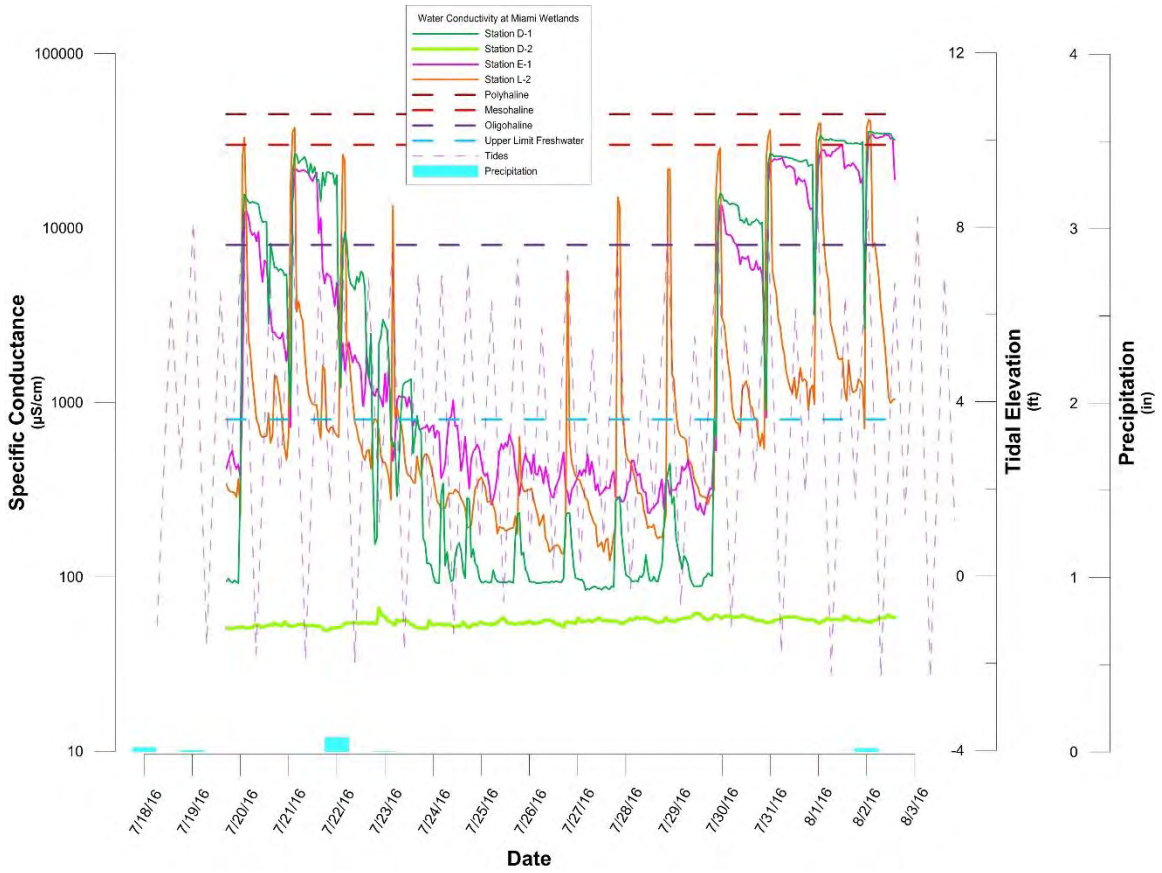
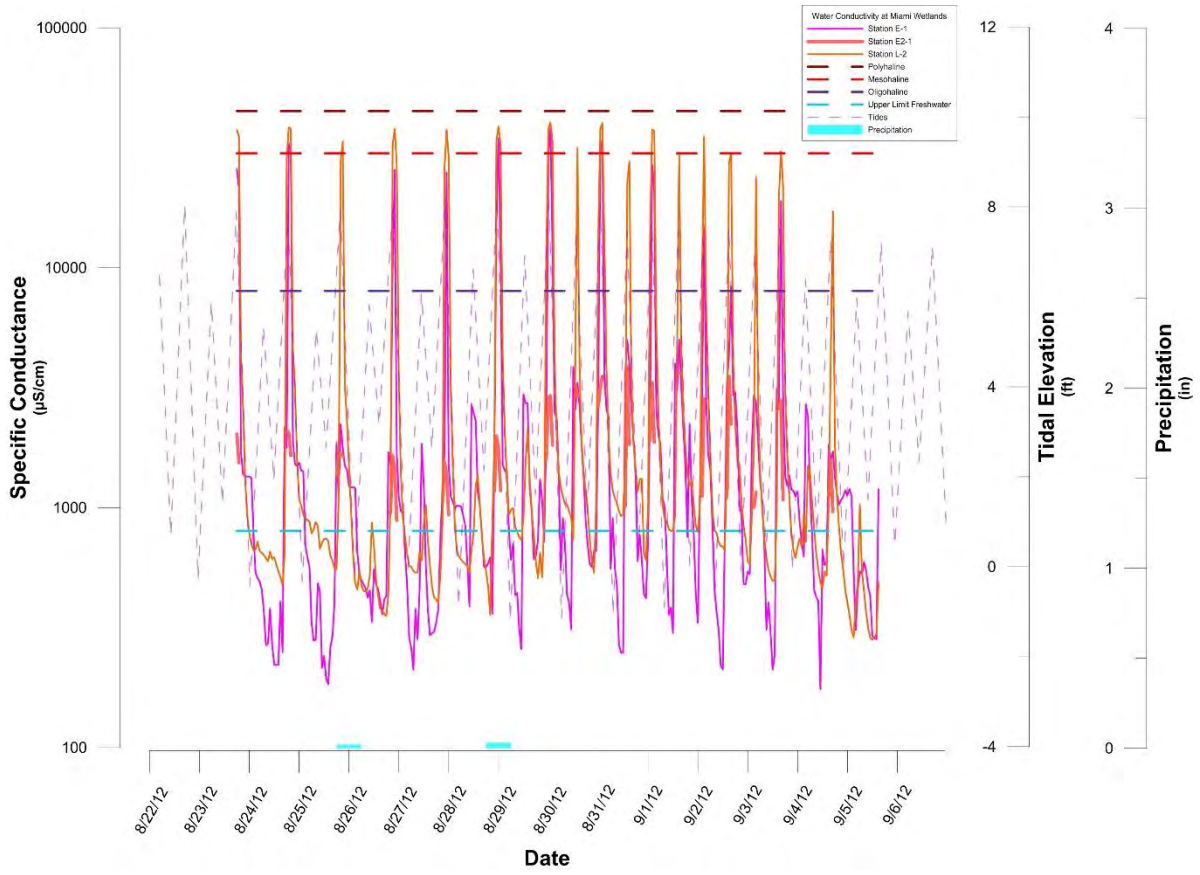
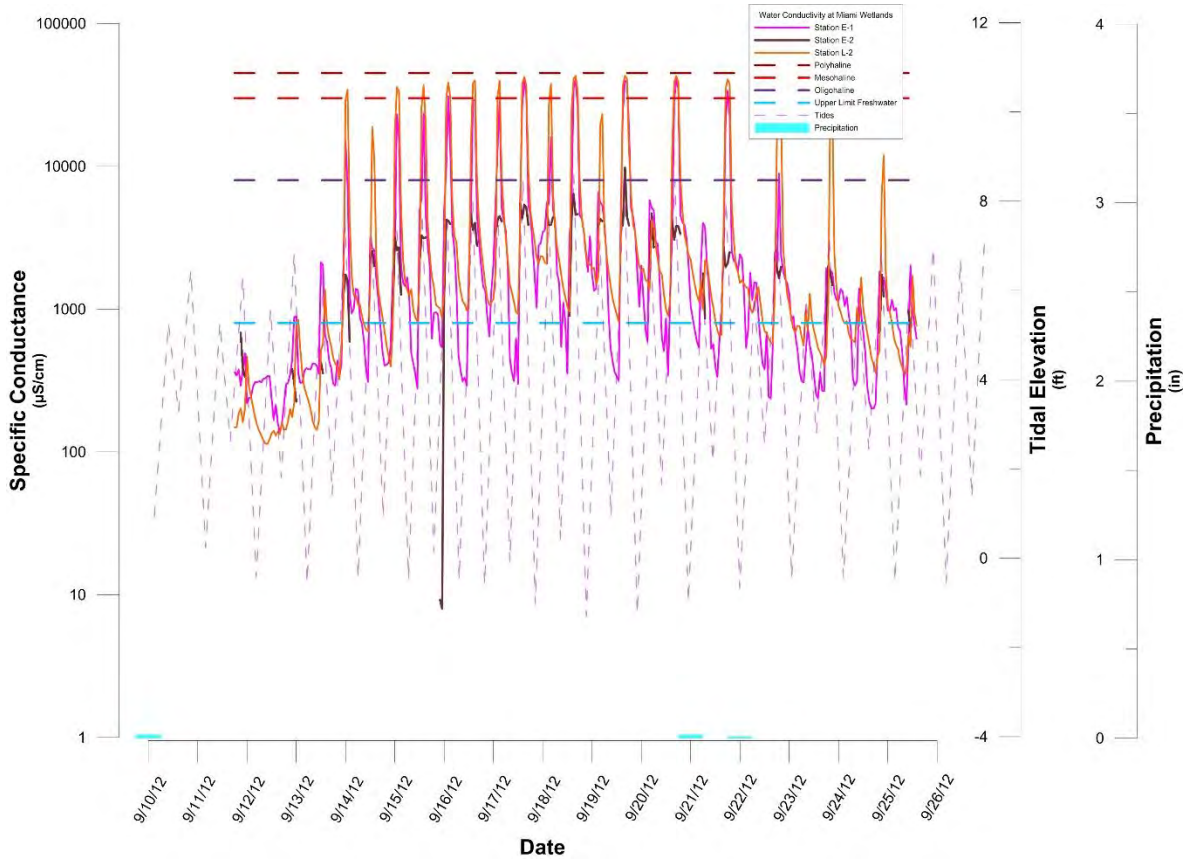


Figure D3. Graphs depicting post-restoration specific conductance levels in constructed channels at the Miami Wetlands during fall 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.





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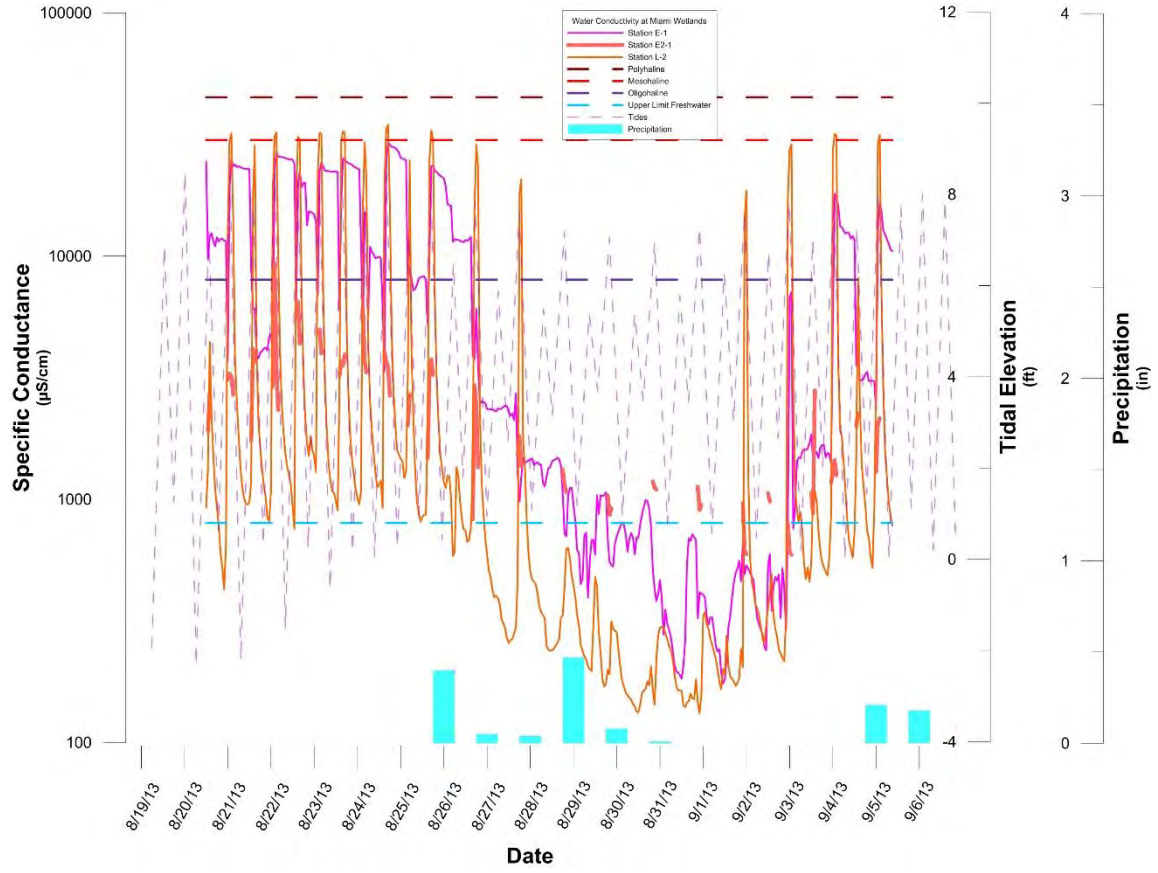

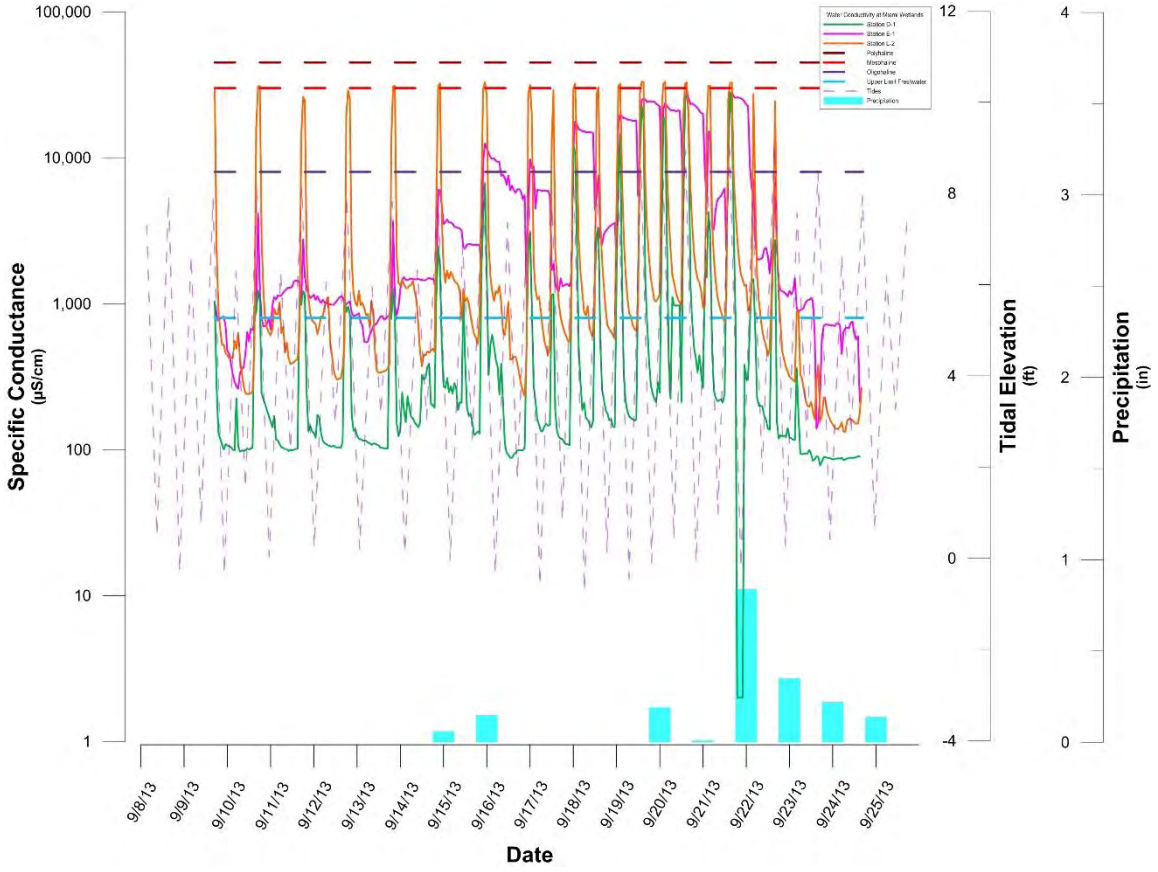

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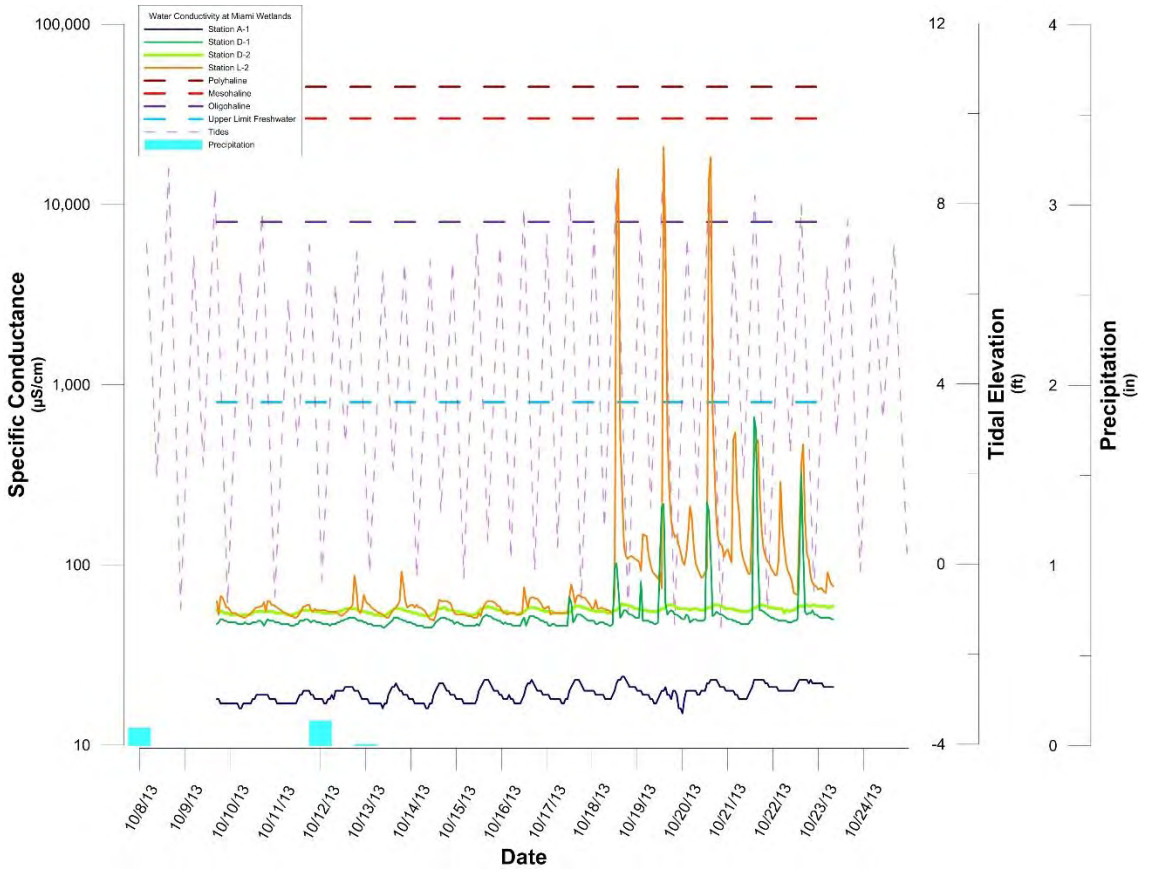

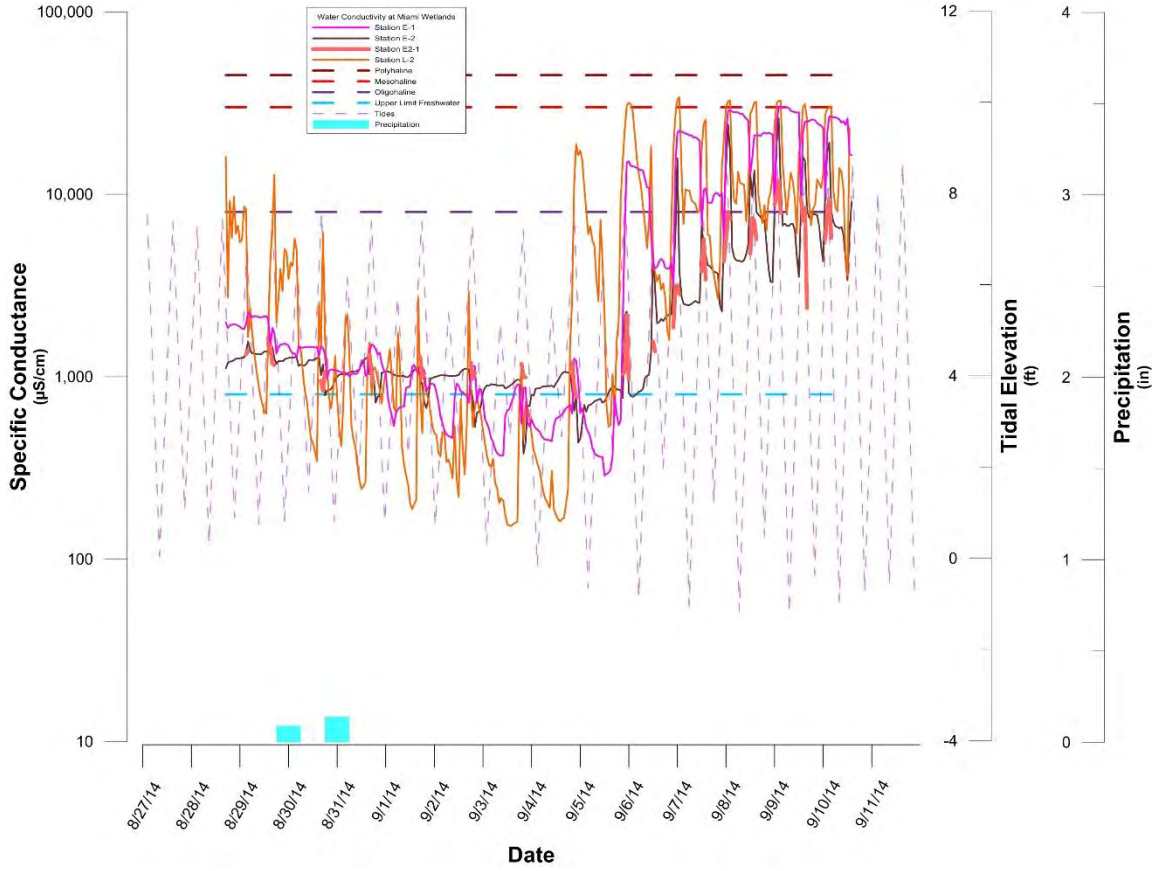

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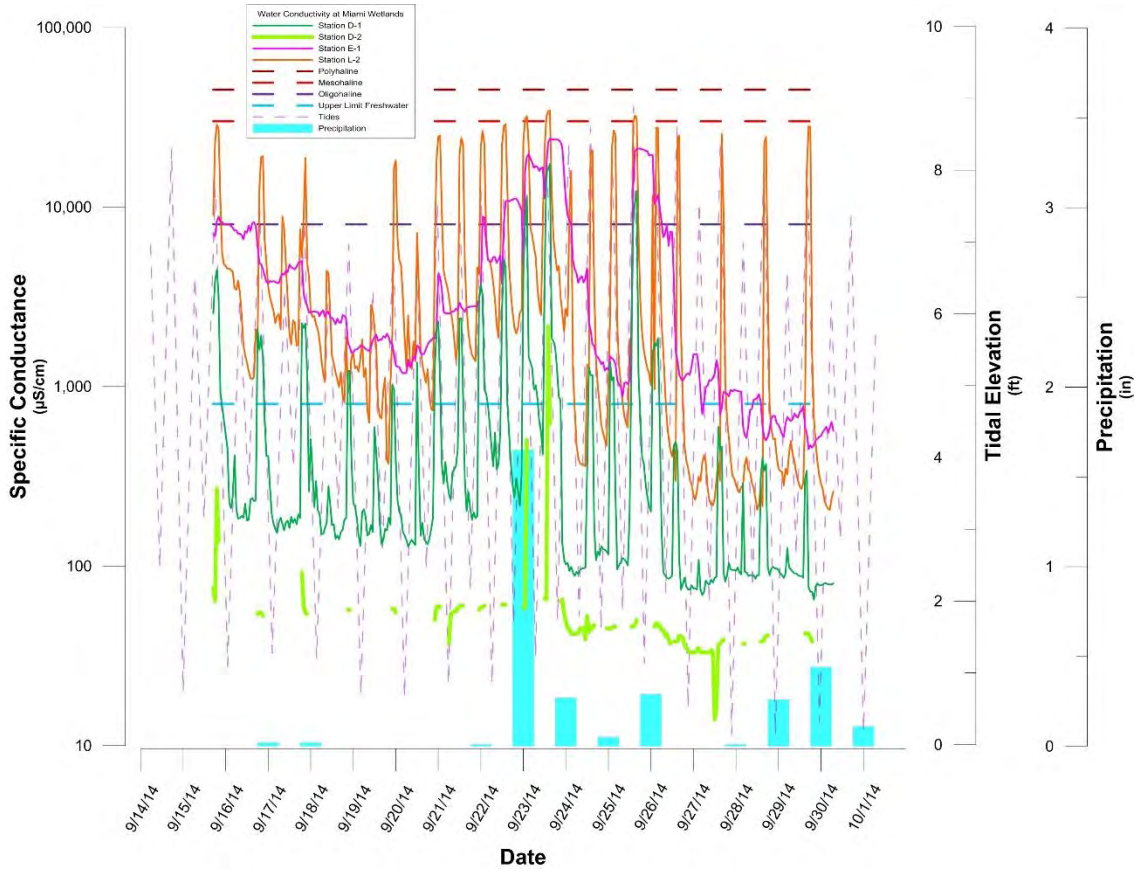


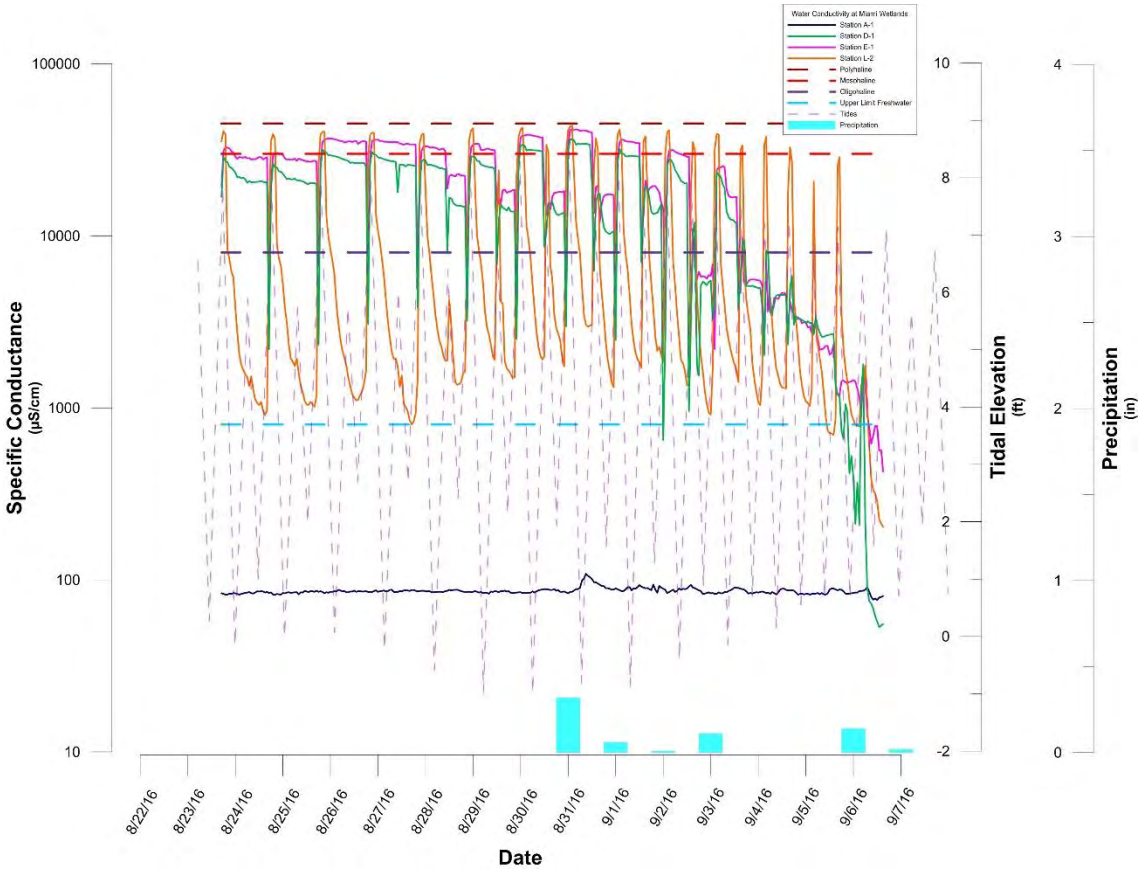
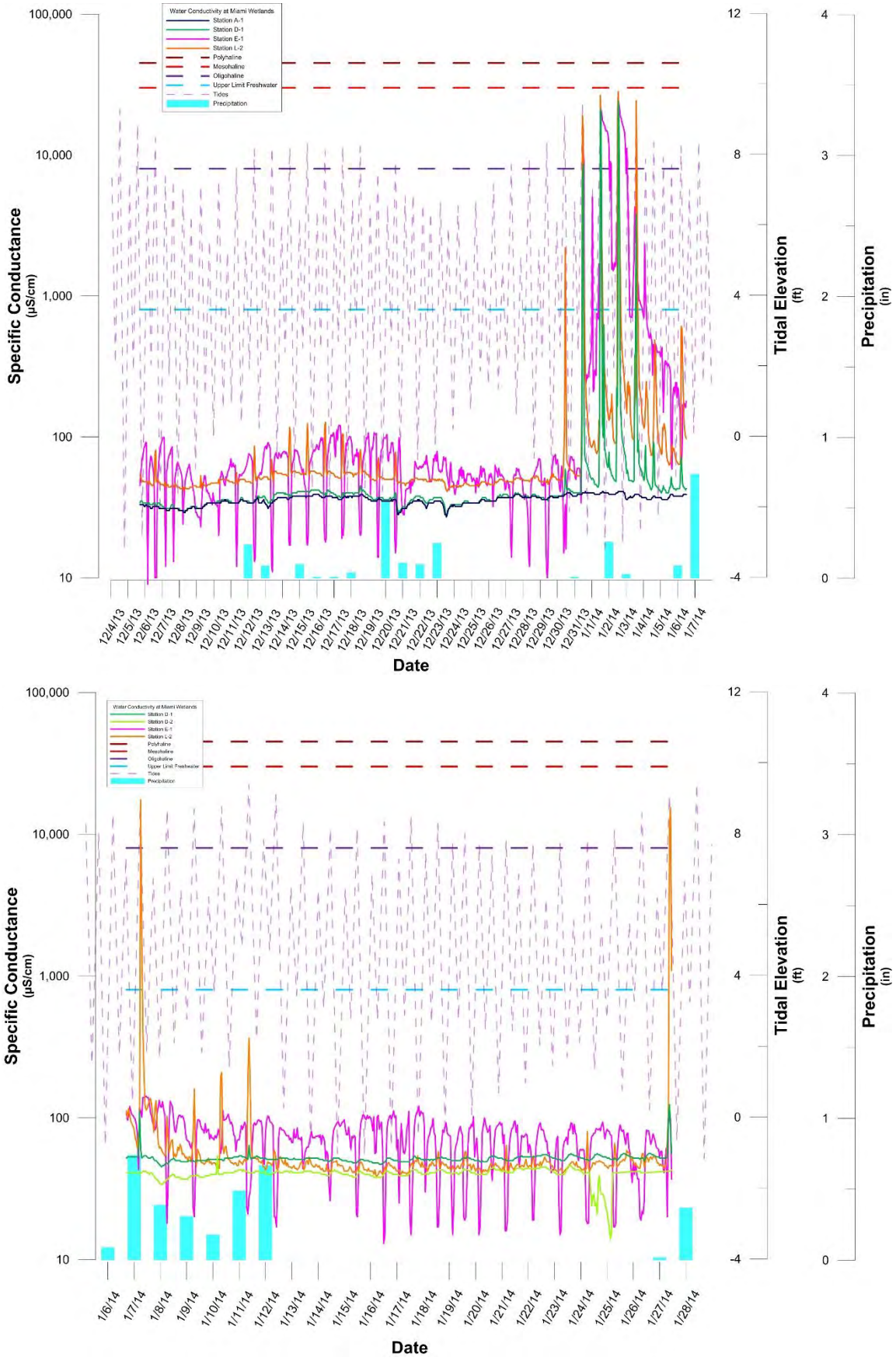


Figure D4. Graphs depicting post-restoration specific conductance levels in constructed channels at the Miami Wetlands during winter 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.



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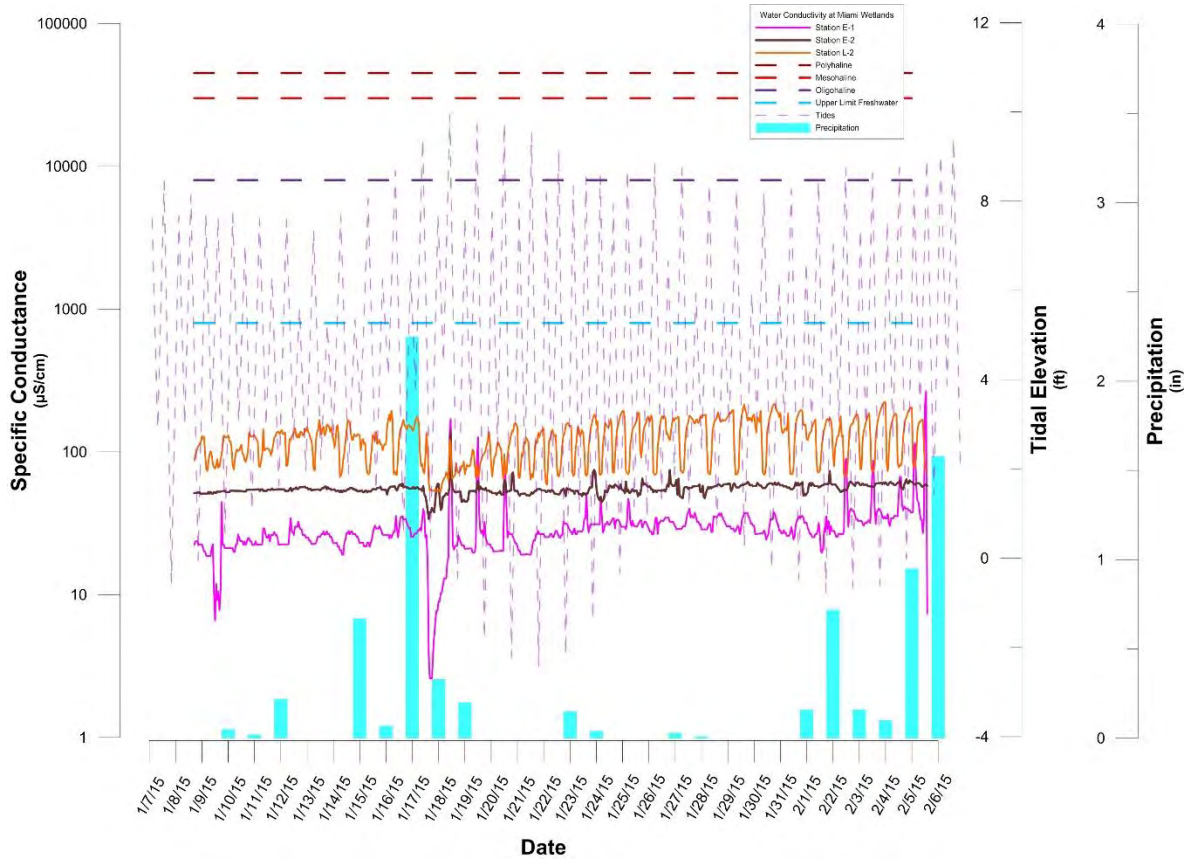
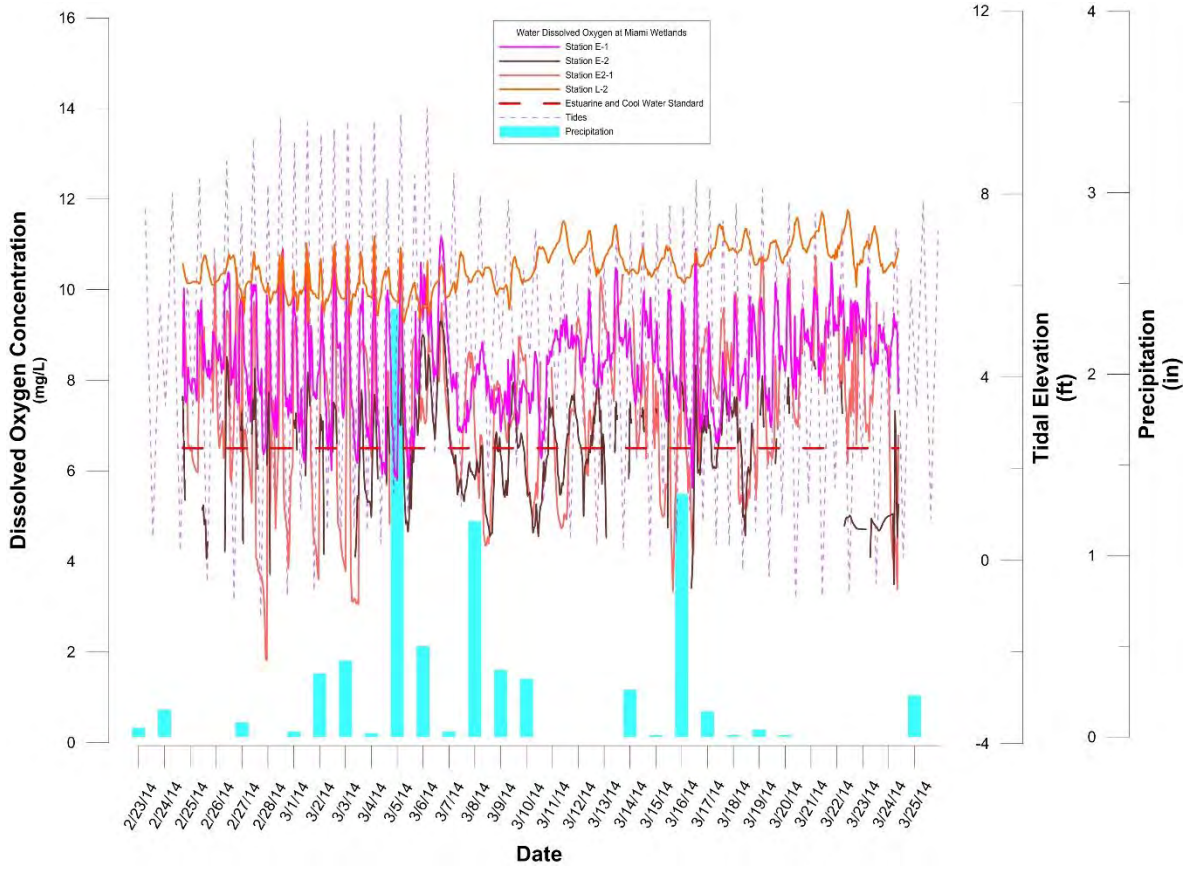


Appendix E

Graphs depicting post-restoration dissolved oxygen levels for water in constructed channels at the Miami Wetlands

Figure E1. Graphs depicting post-restoration dissolved oxygen levels in constructed channels at the Miami Wetlands during spring 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.



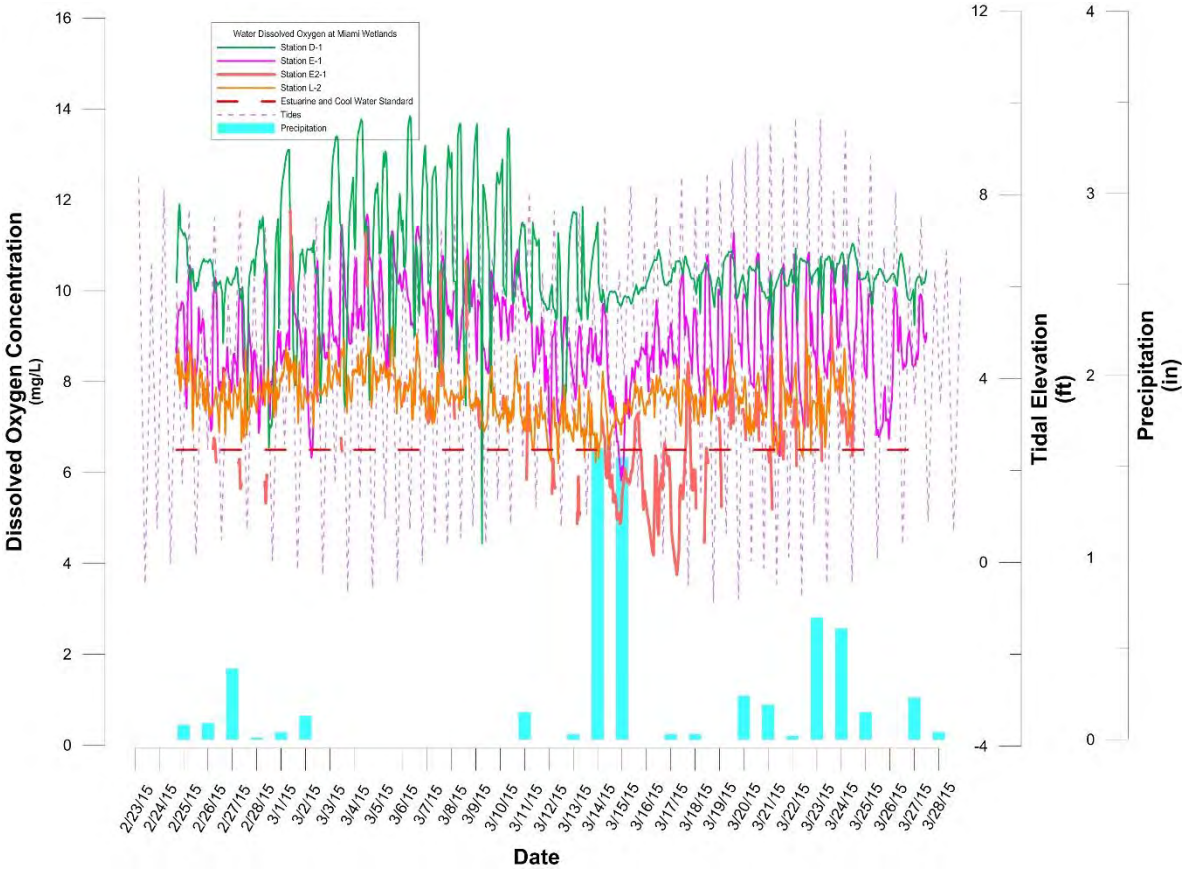


Figure E1. continued

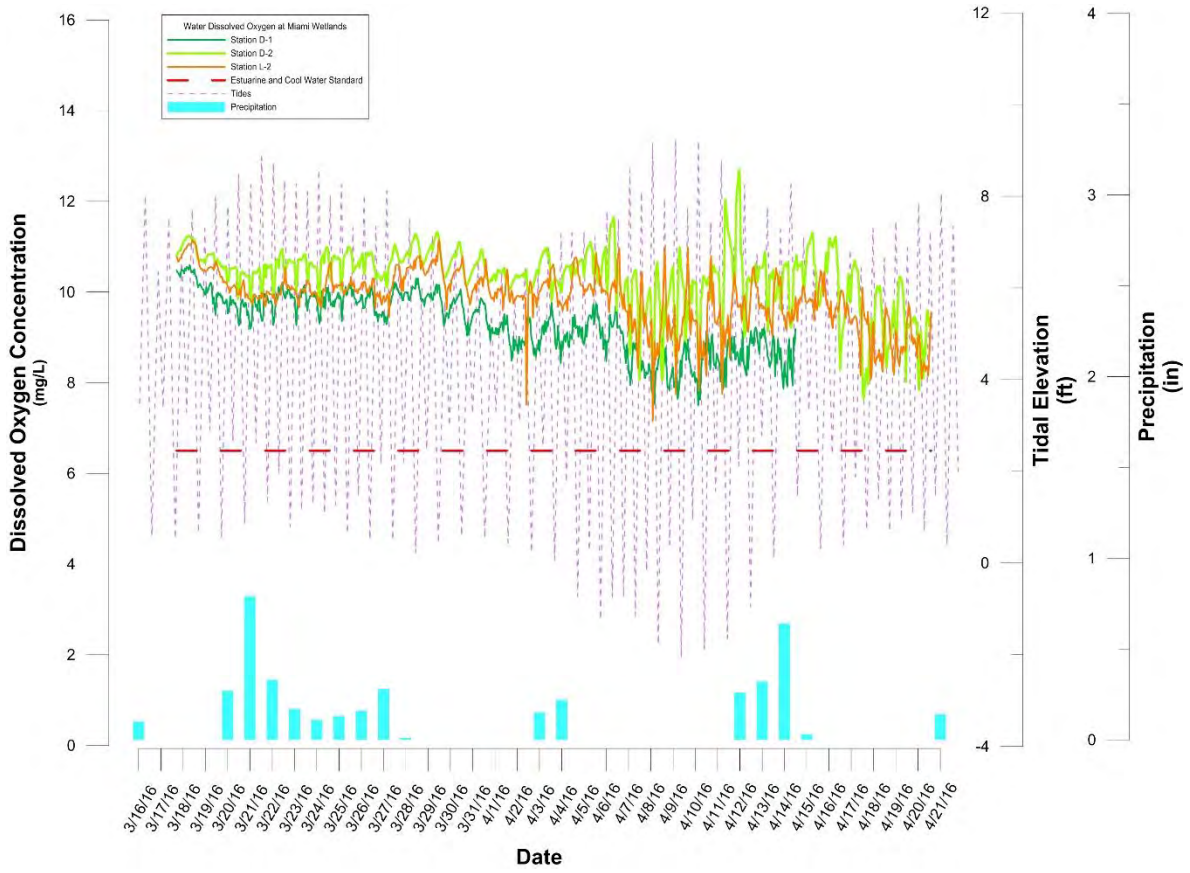
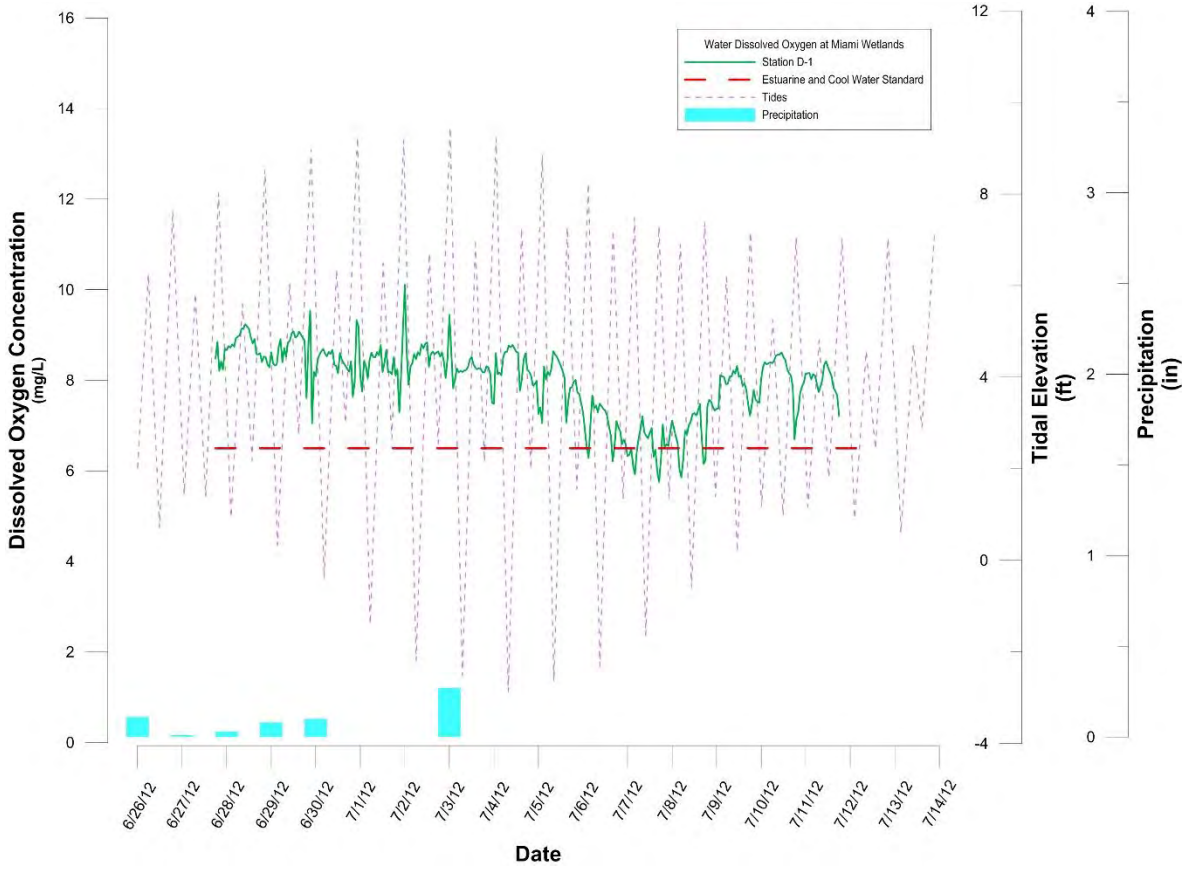


Figure E2. Graphs depicting post-restoration dissolved oxygen levels in constructed channels at the Miami Wetlands during summer 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.



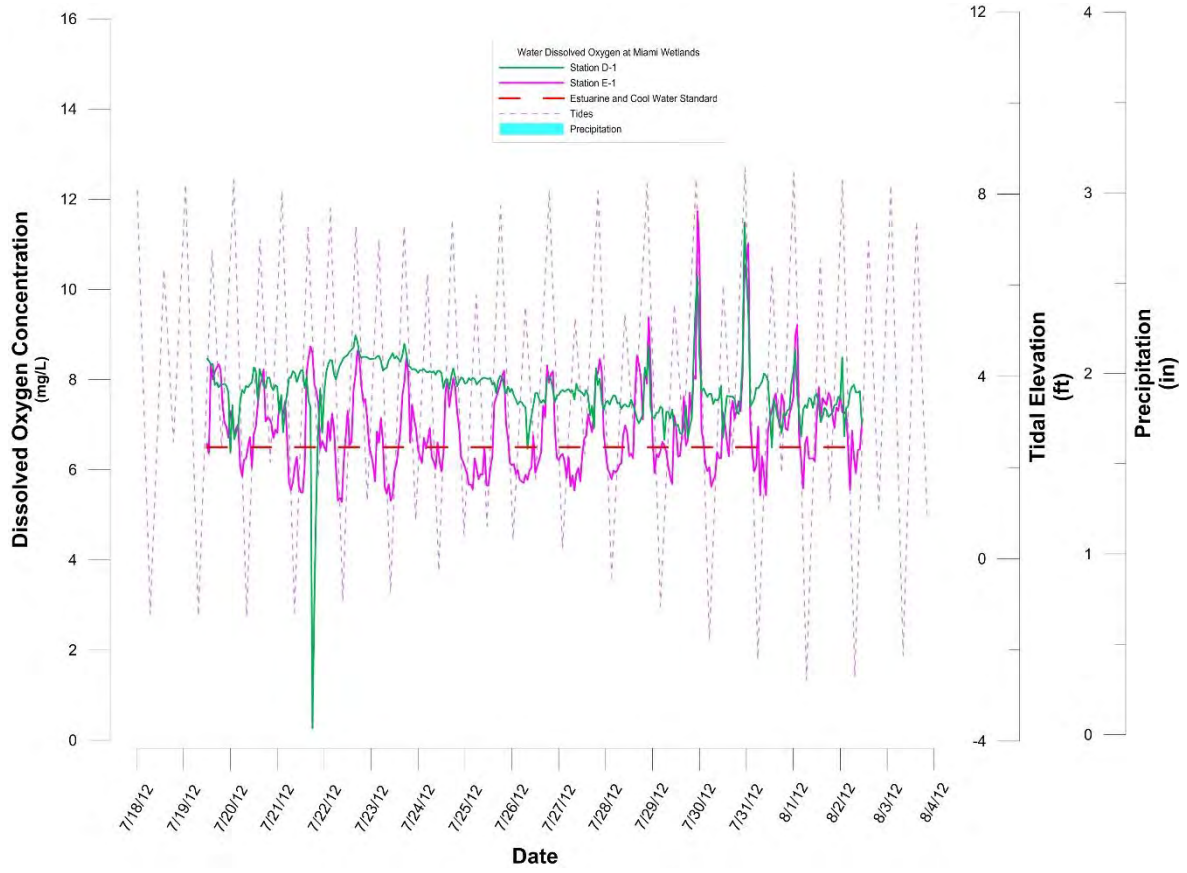
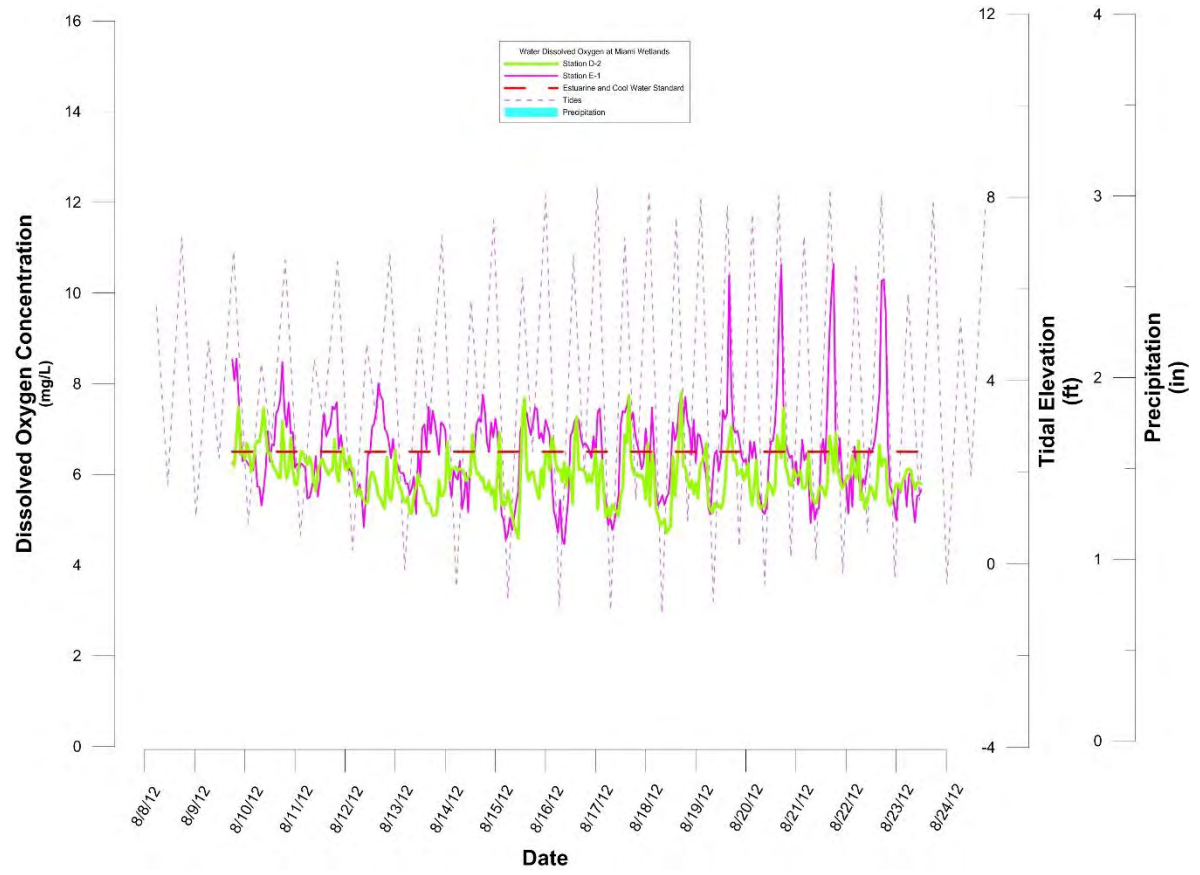


Figure E2. continued



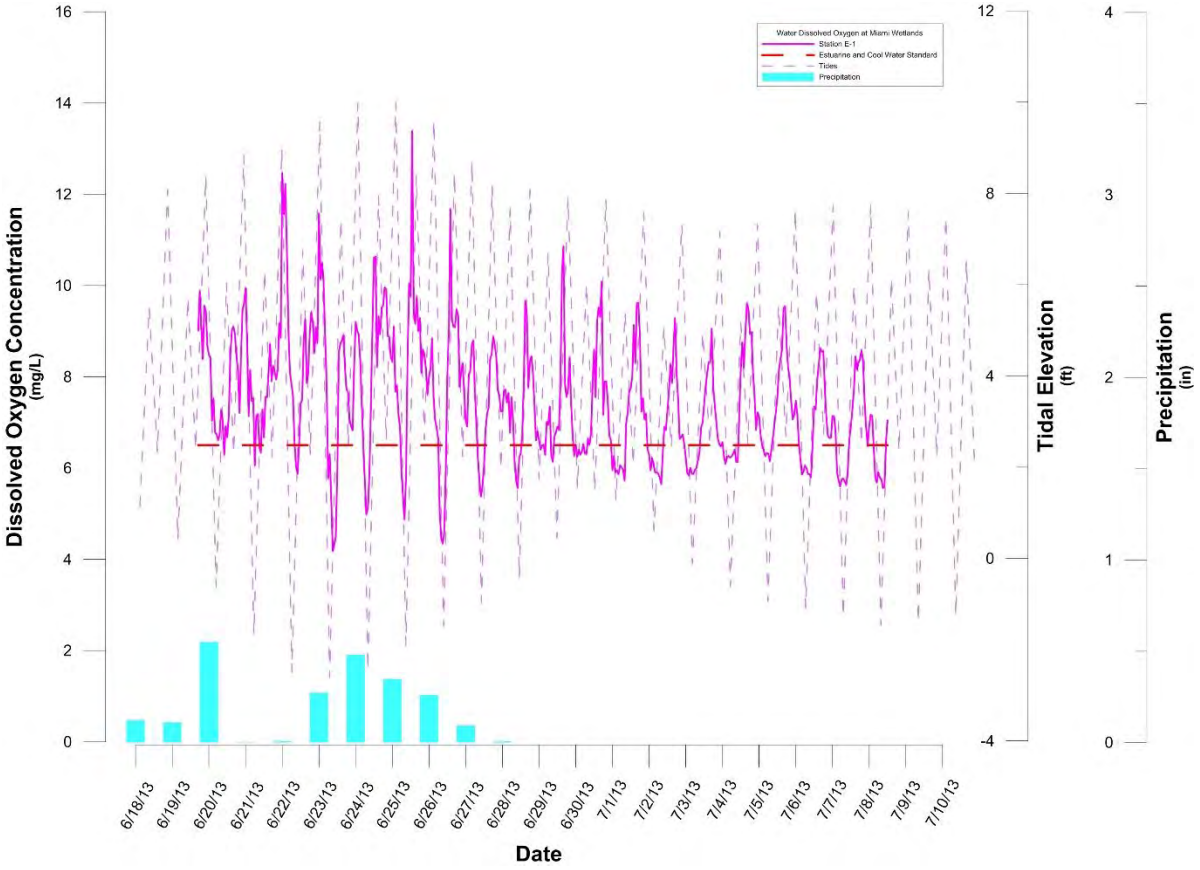
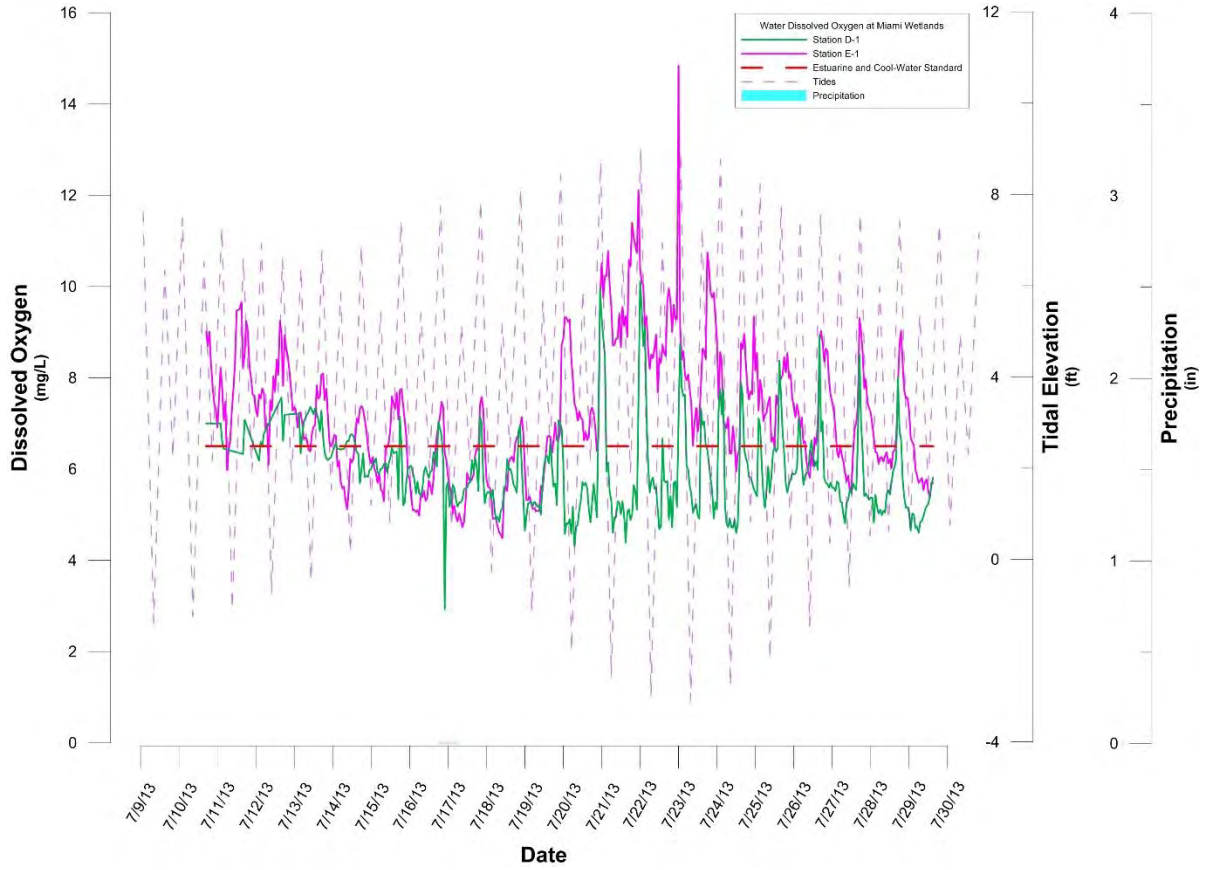


Figure E2. continued



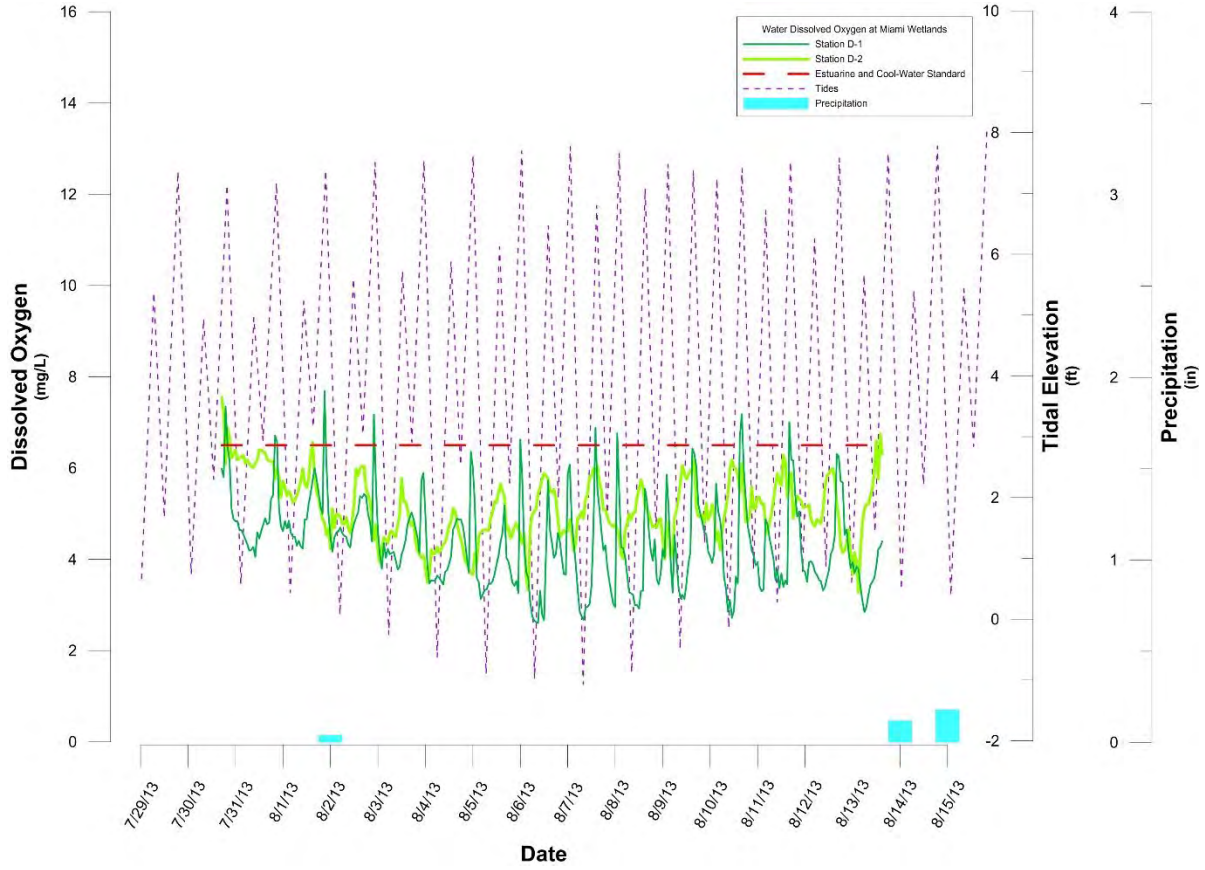
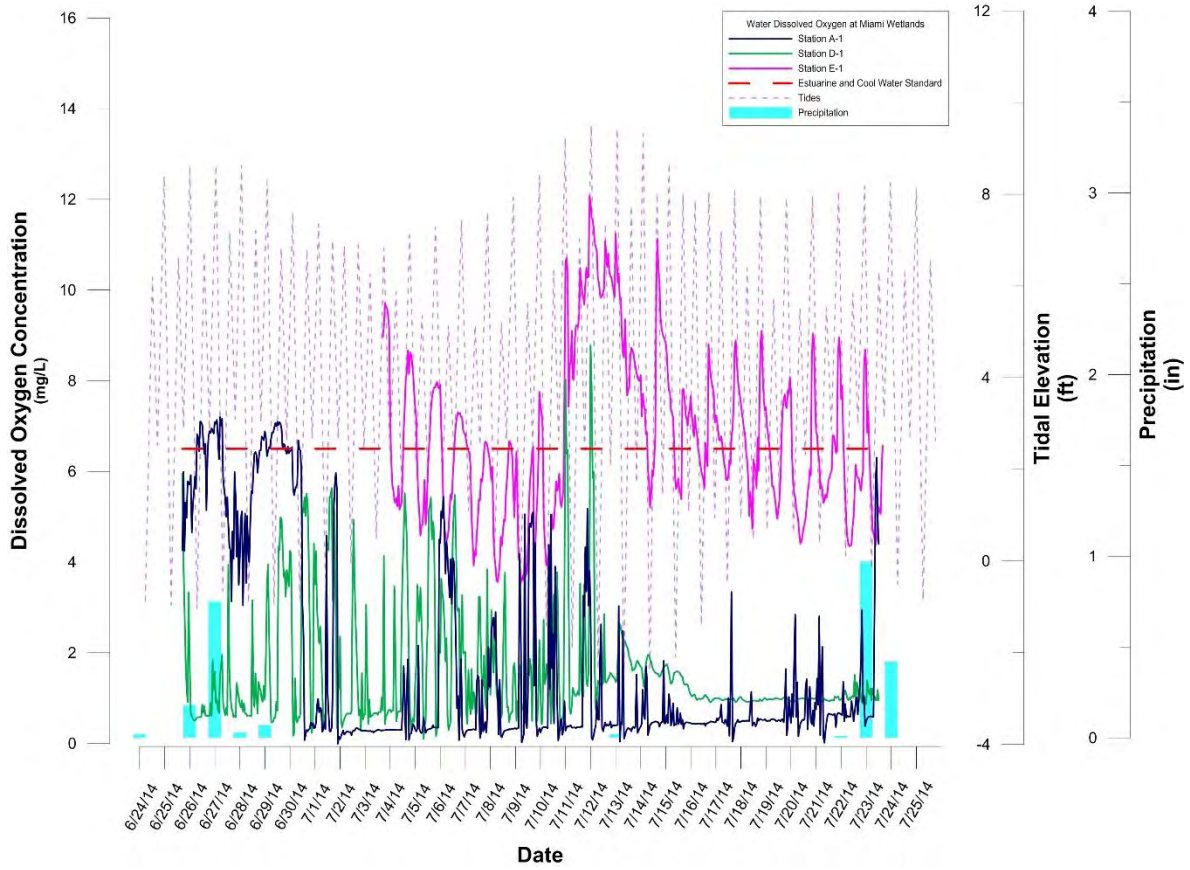
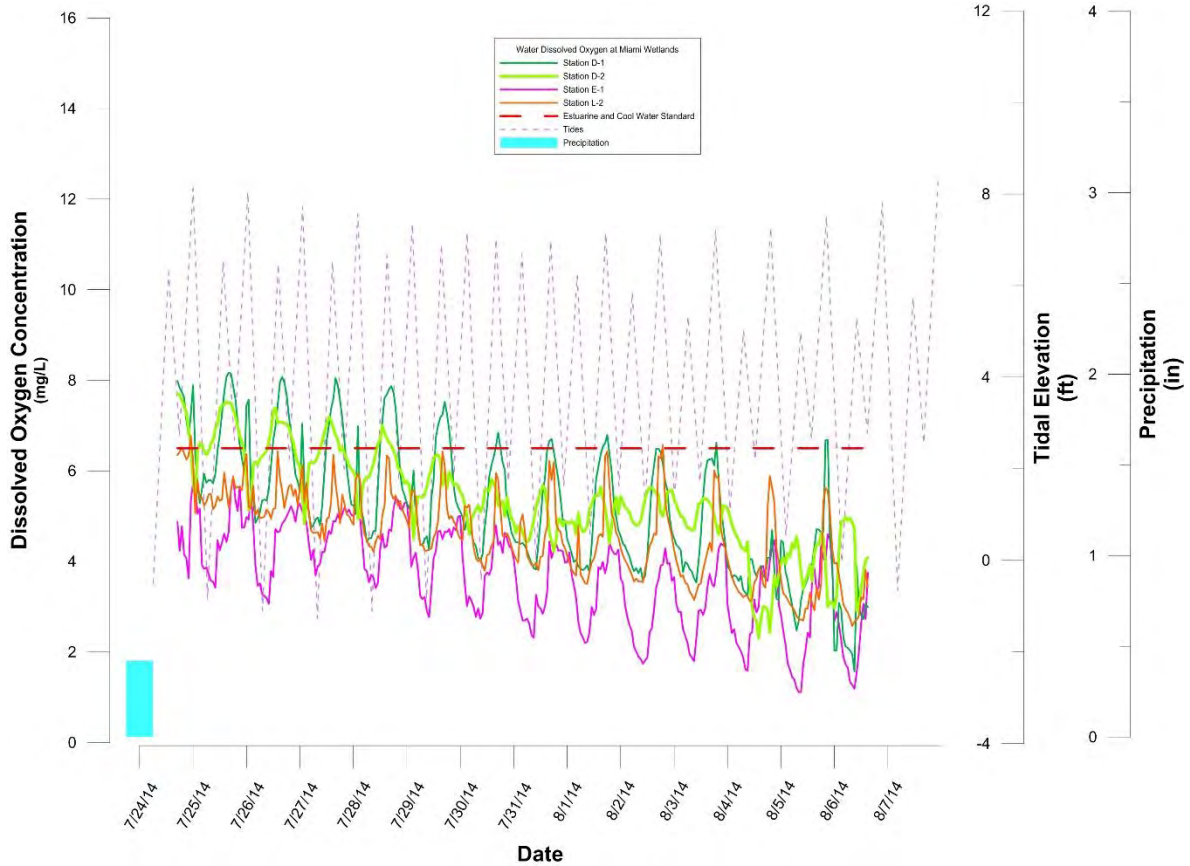


Figure E2. continued





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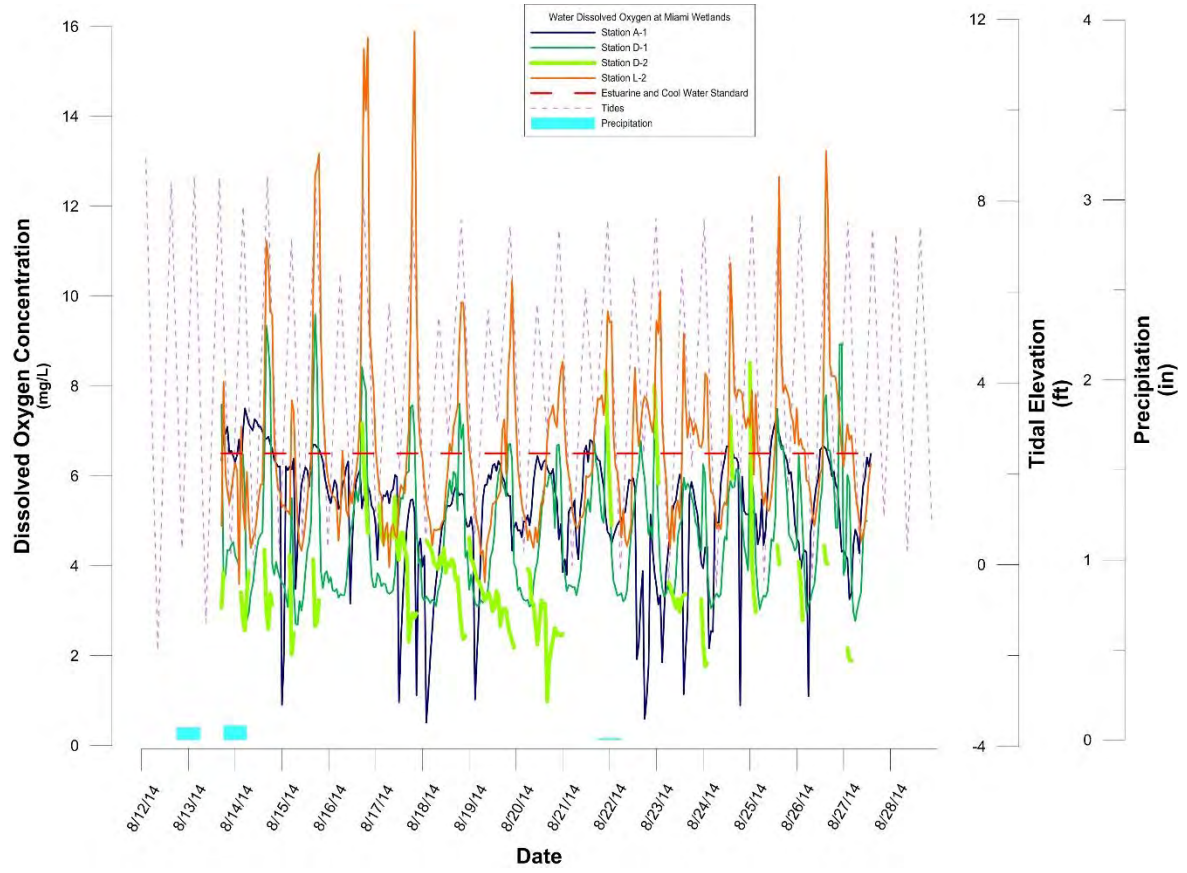


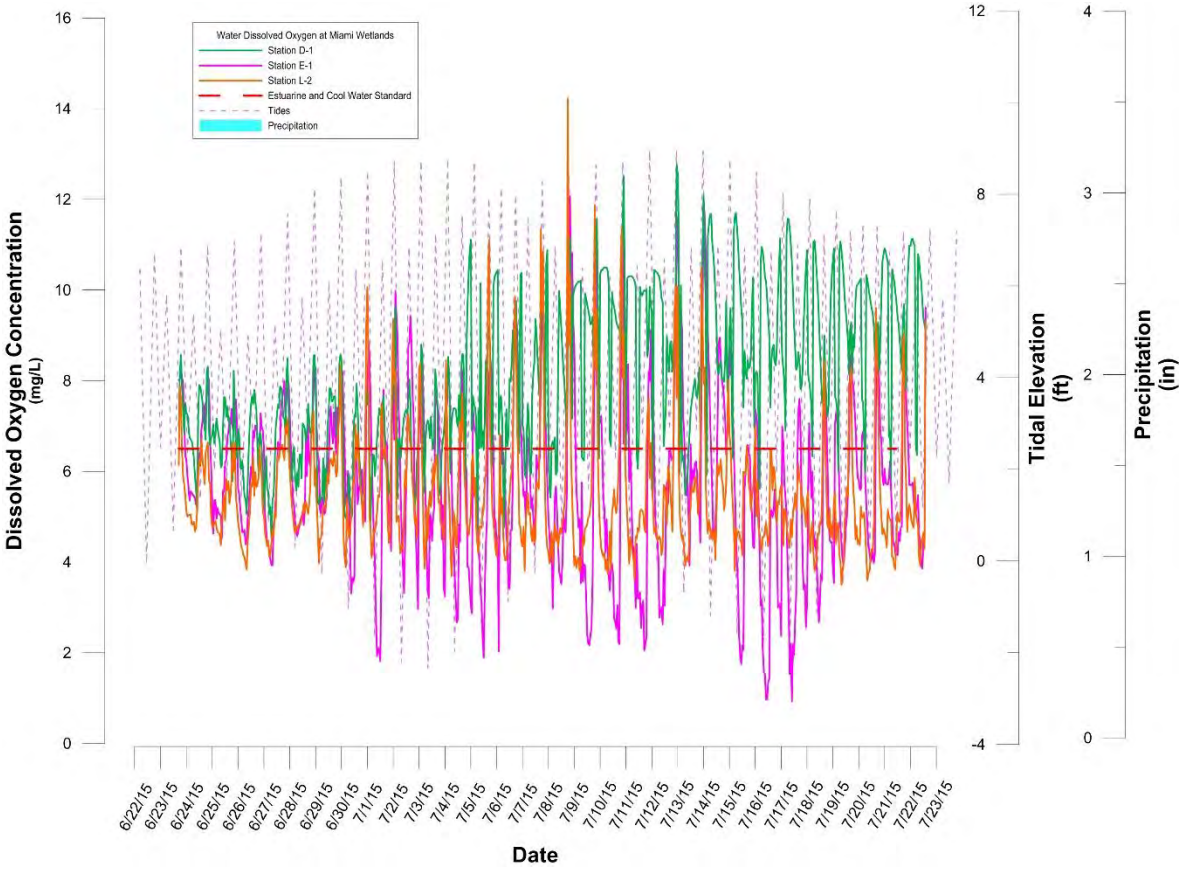
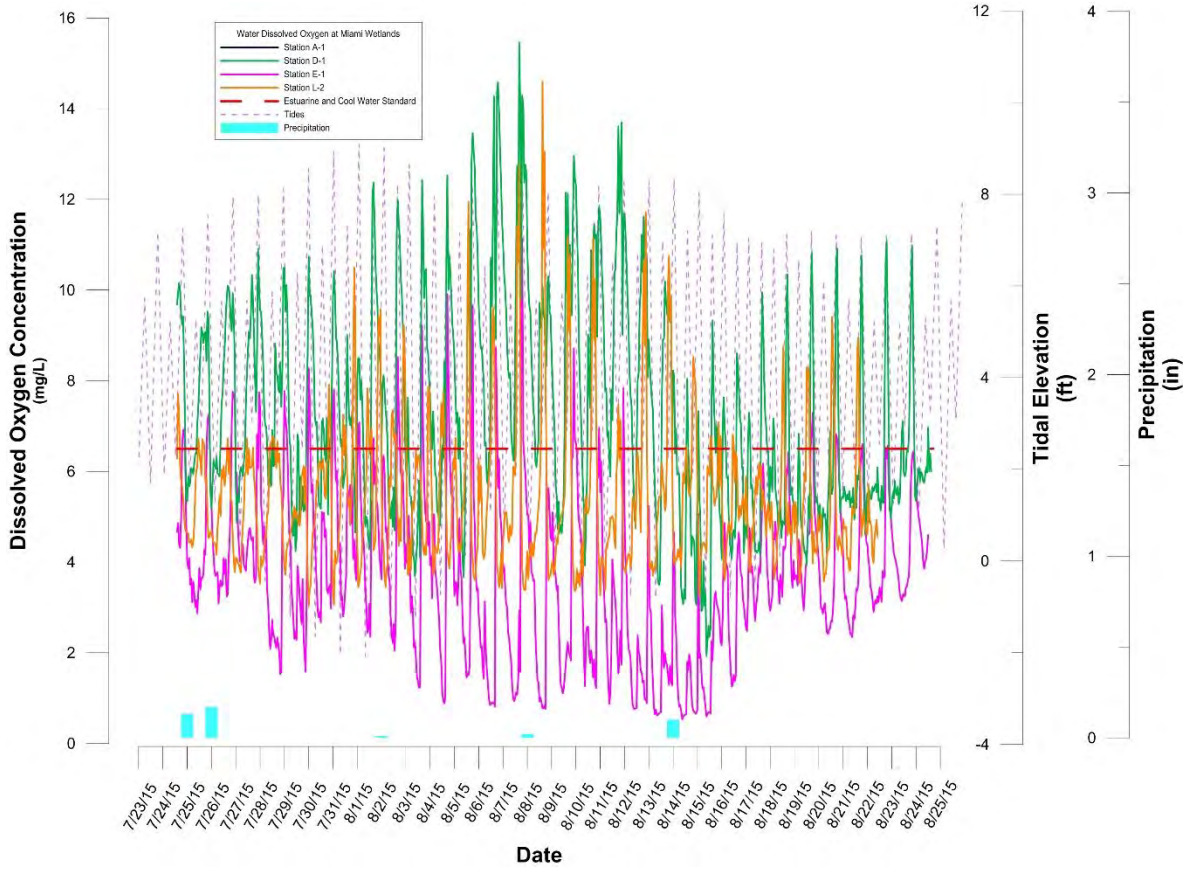


Figure E2. continued



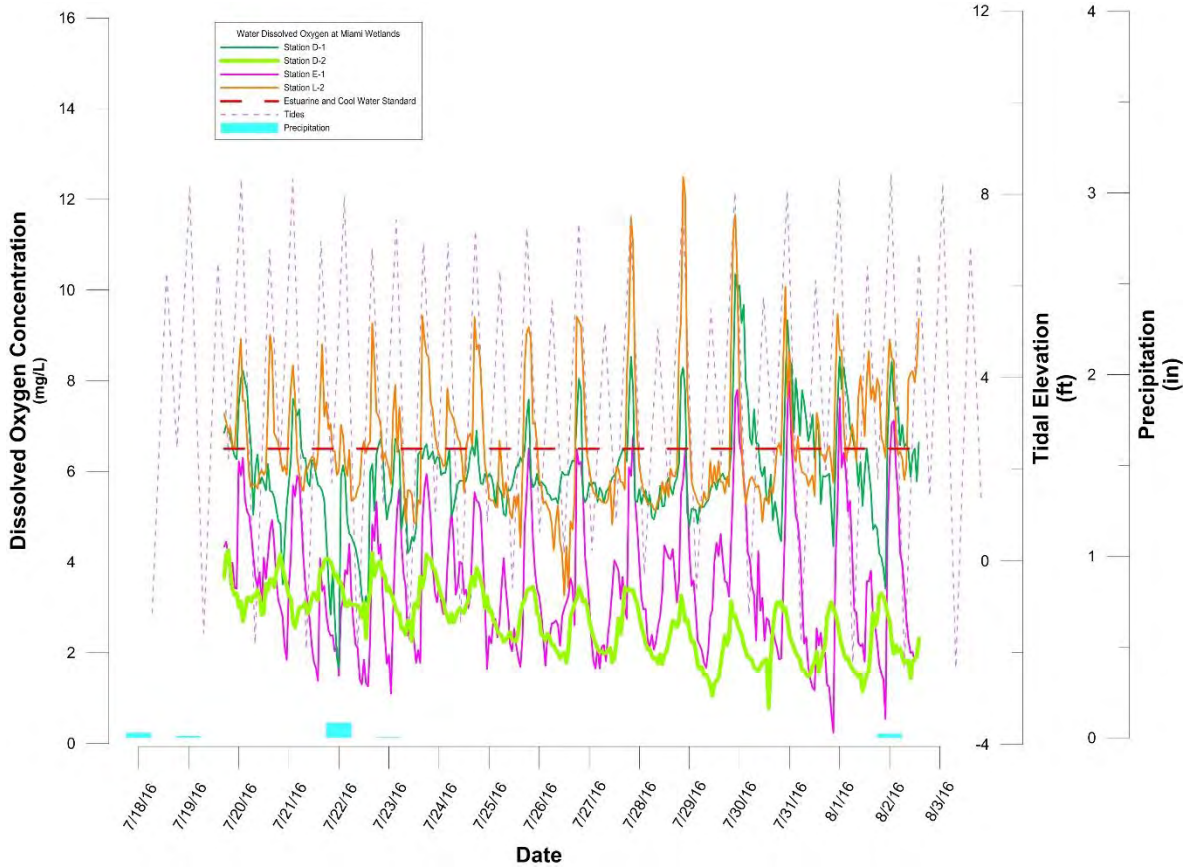
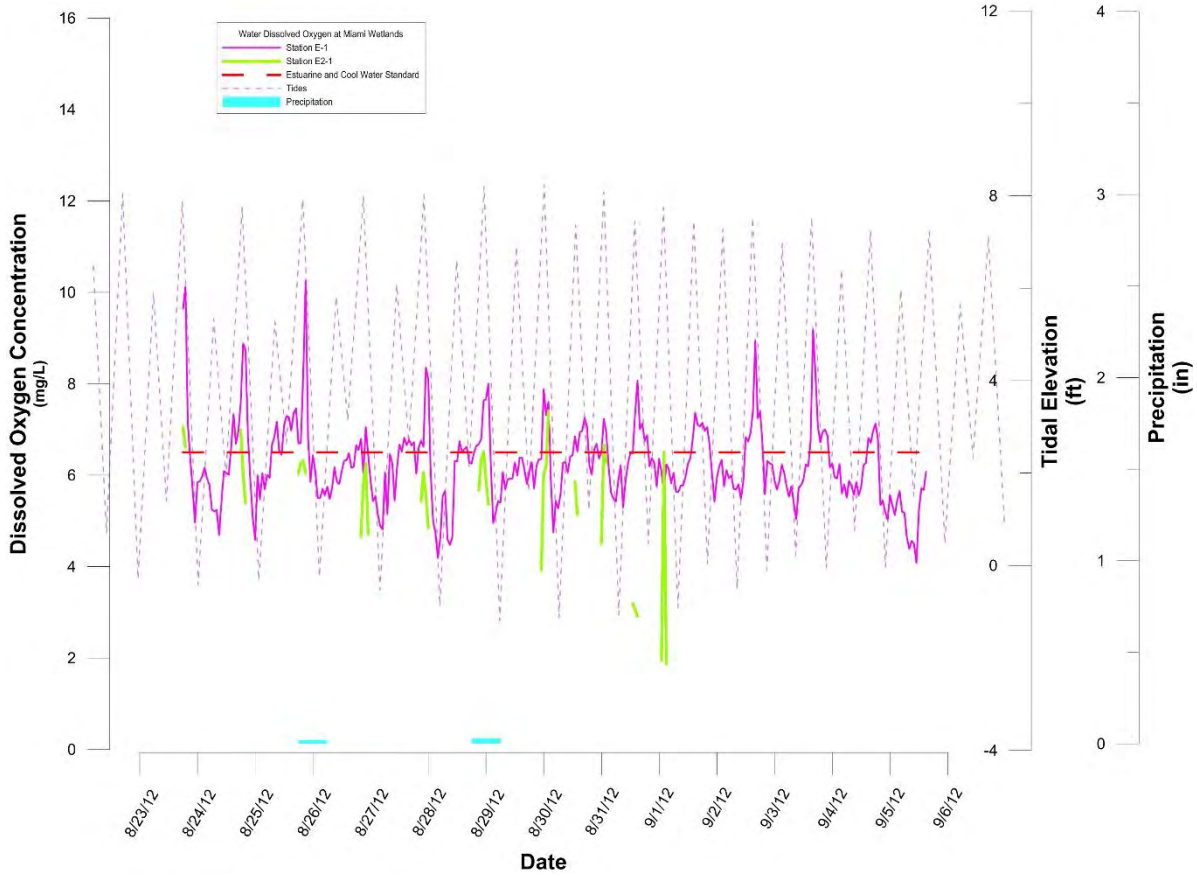


Figure E3. Graphs depicting post-restoration dissolved oxygen levels in constructed channels at the Miami Wetlands during fall 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.



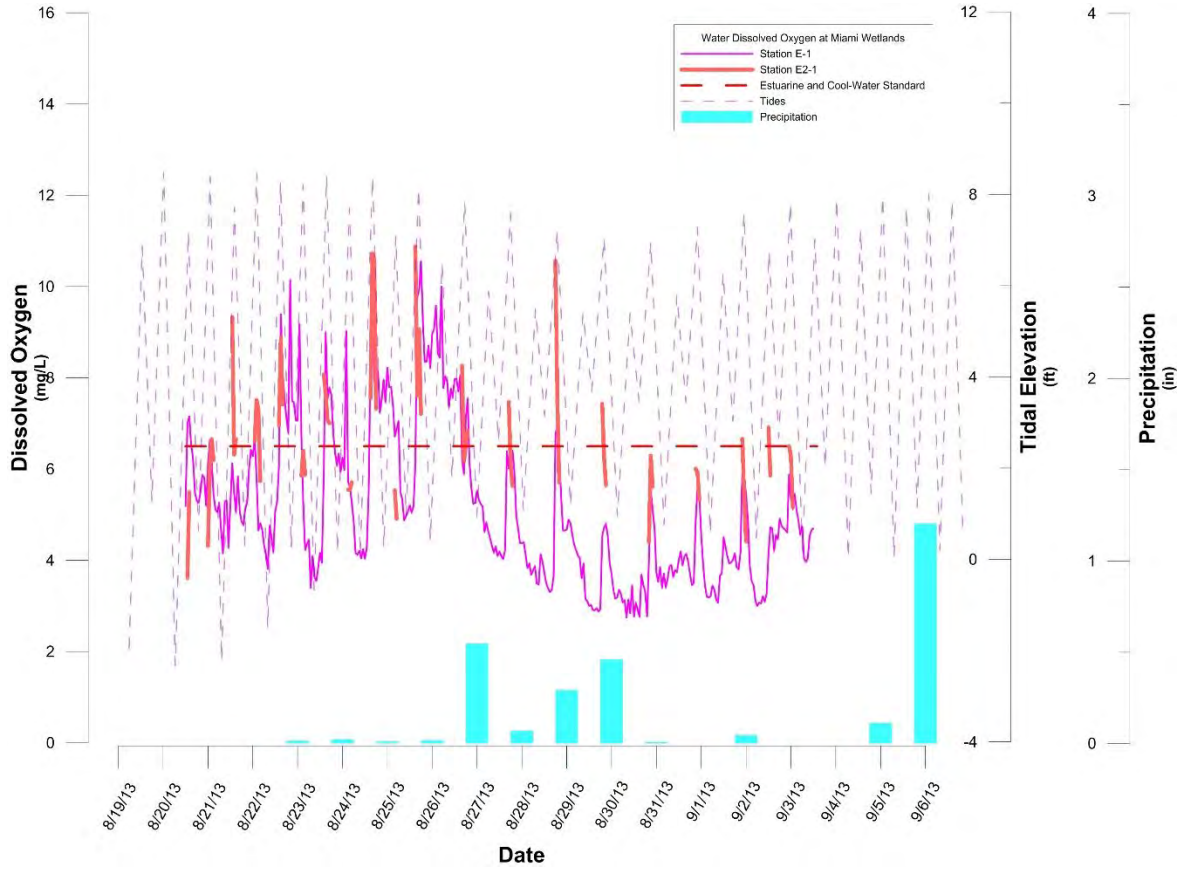
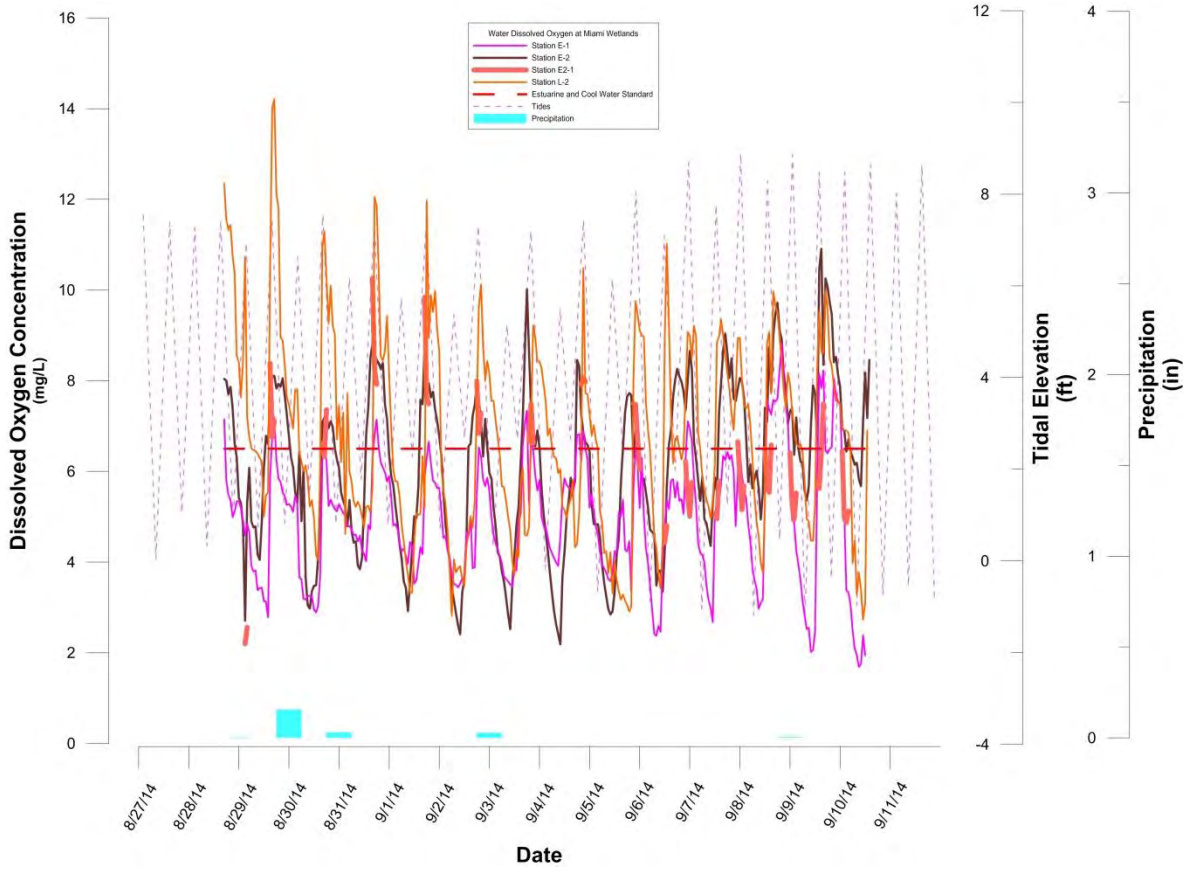


Figure E3. continued



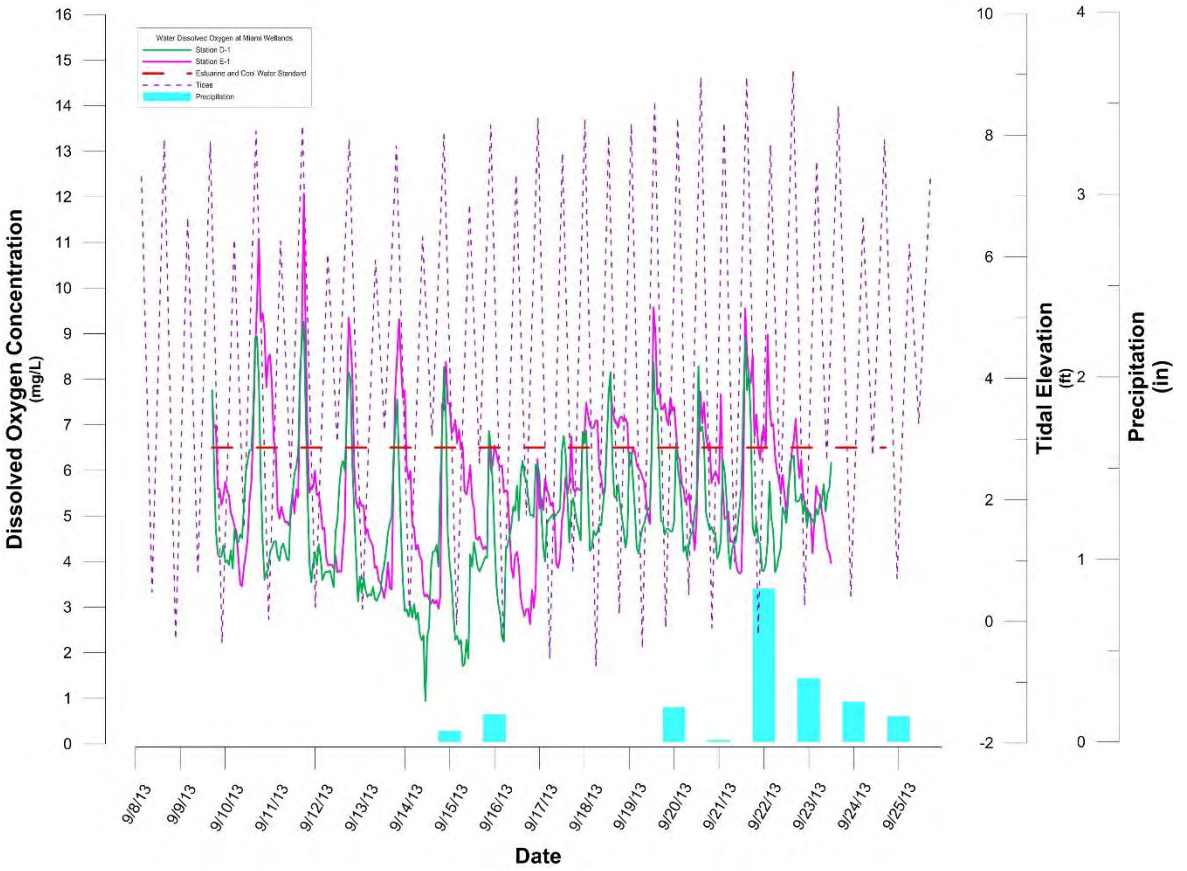
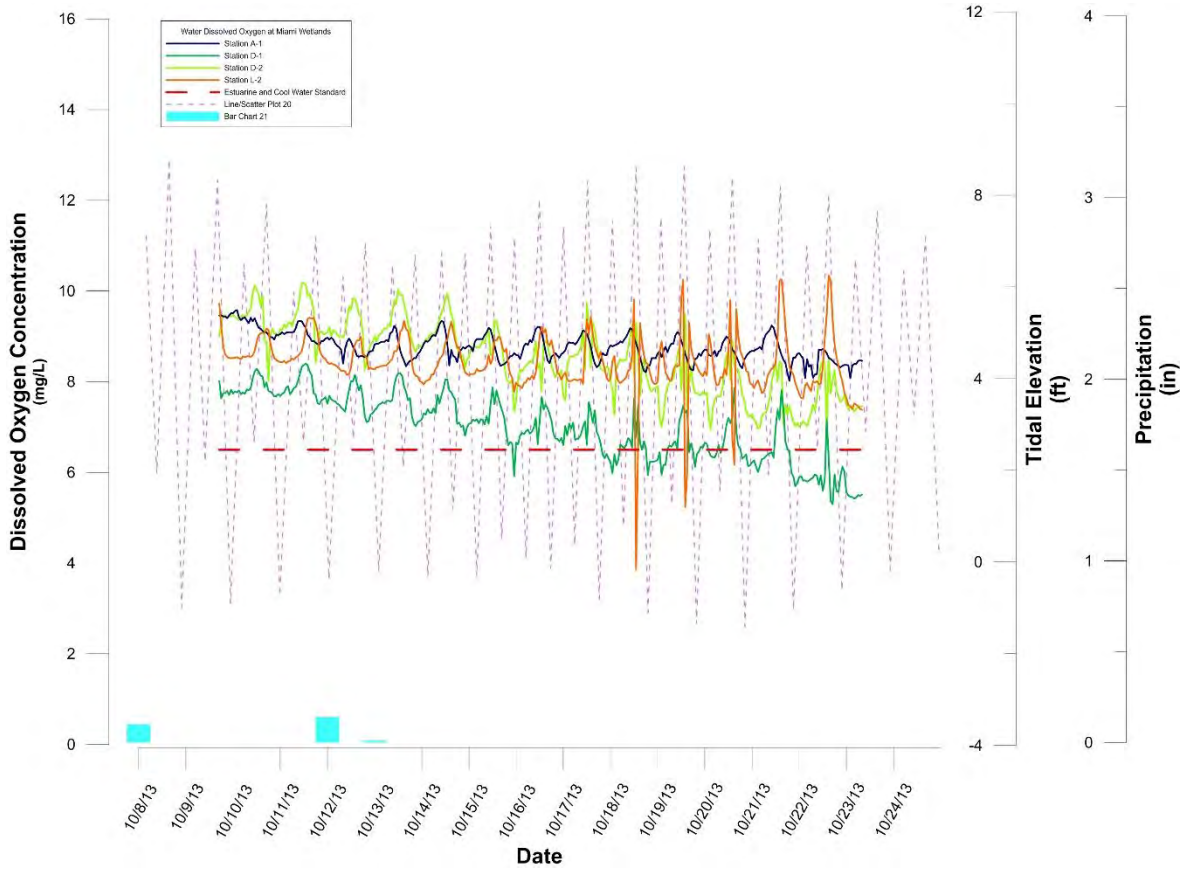


Figure E3. continued



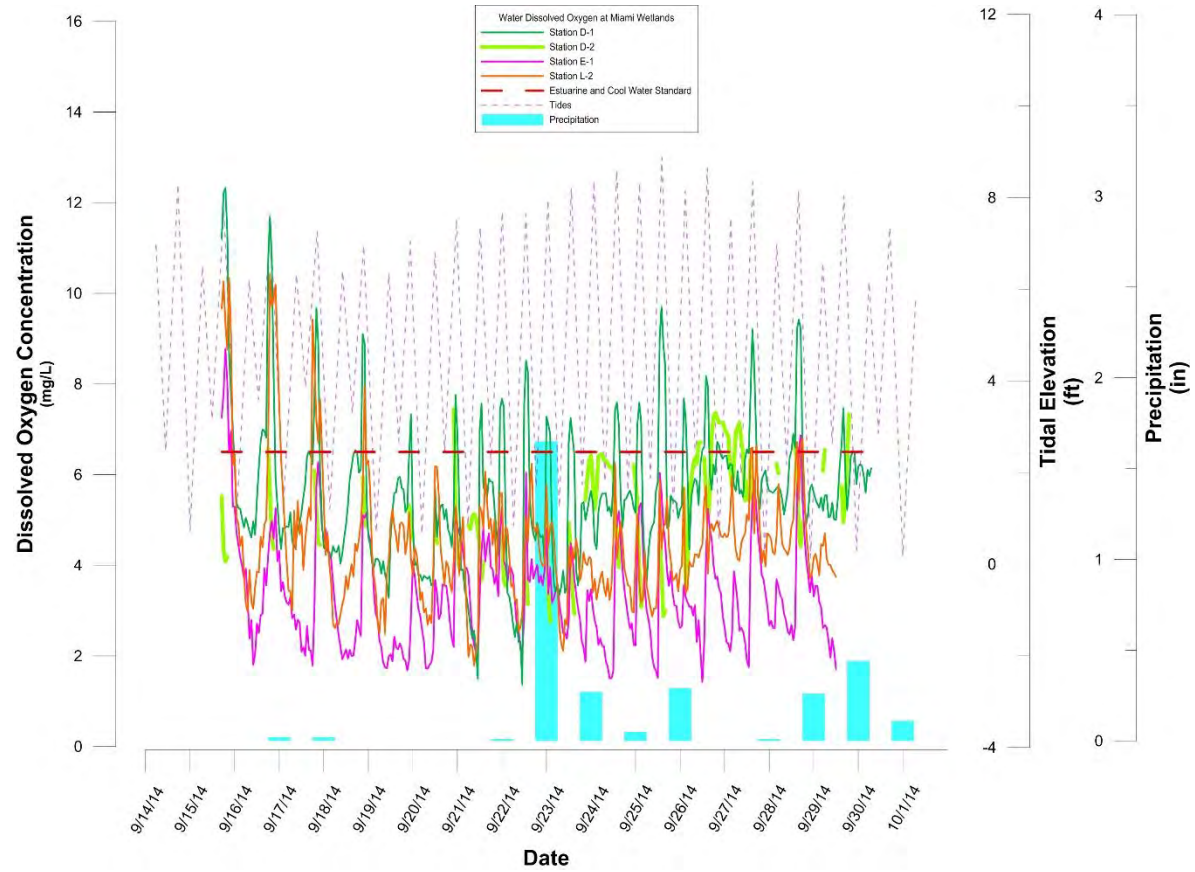


Figure E3. continued

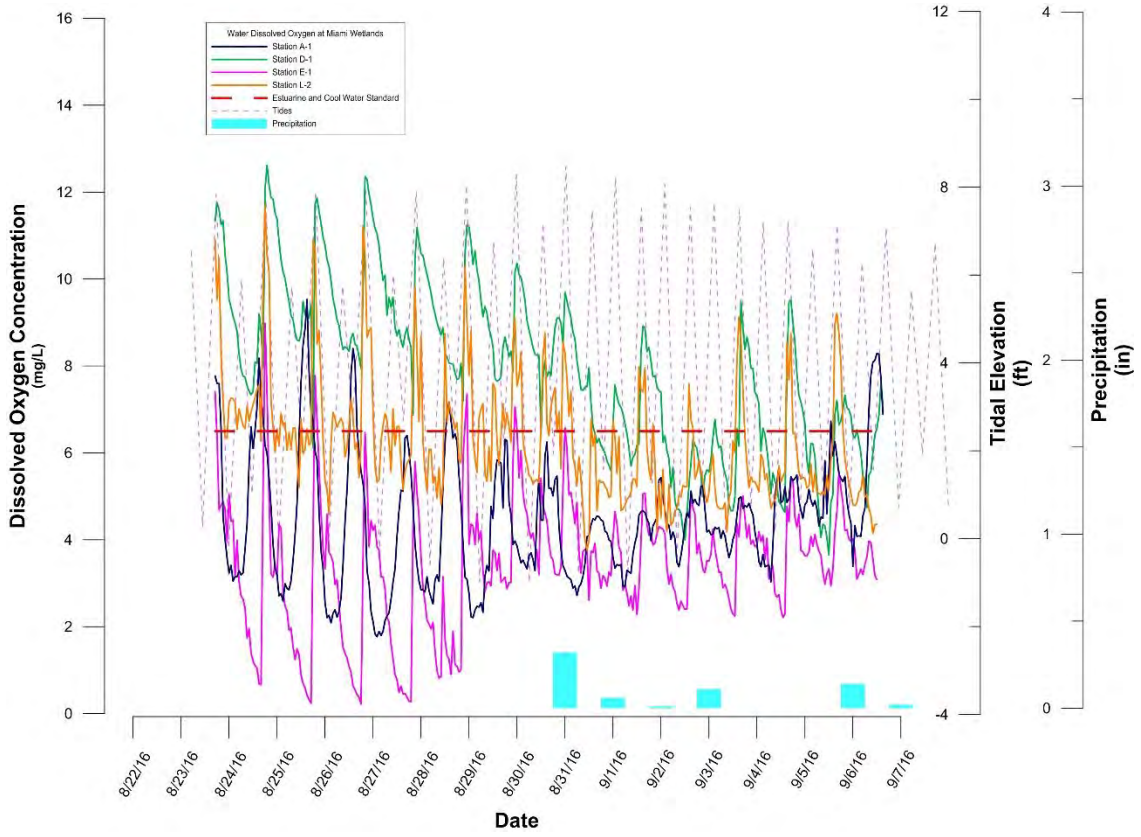
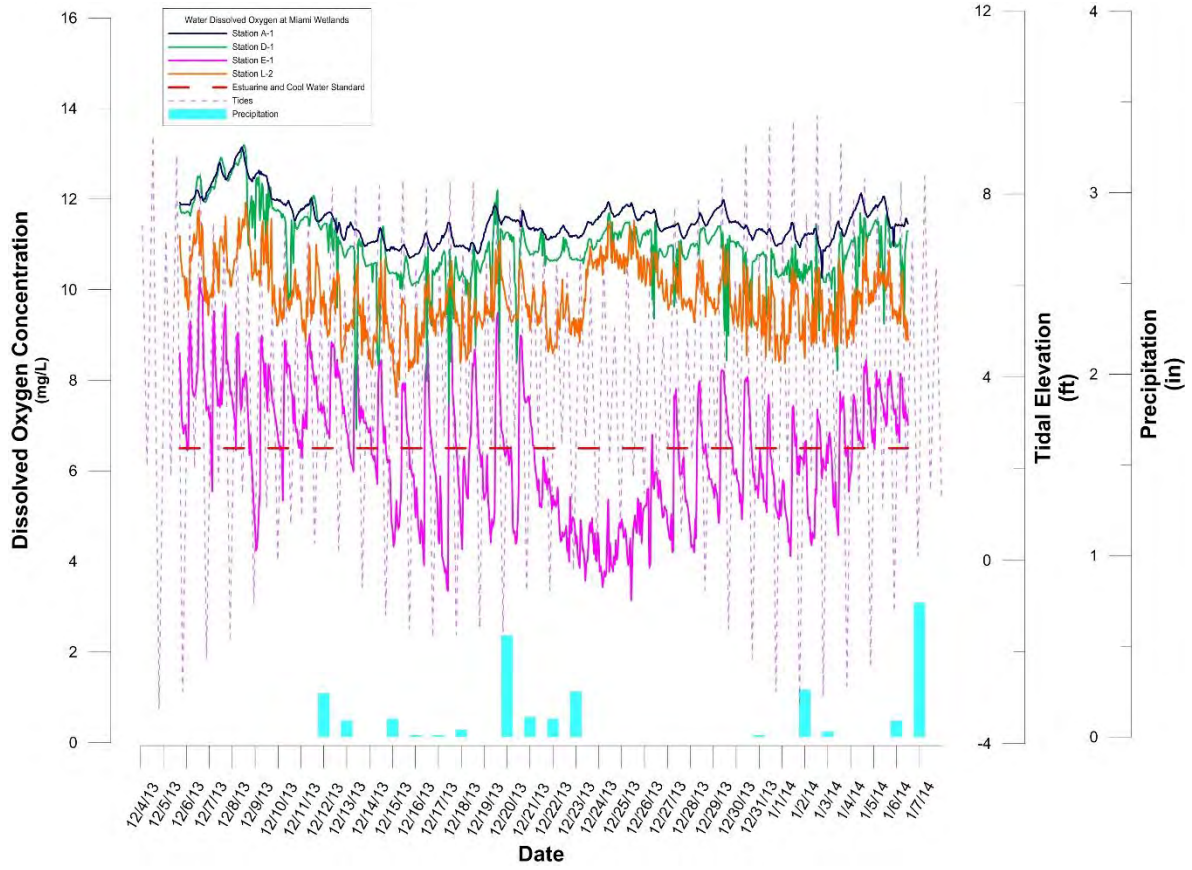


Figure E4. Graphs depicting post-restoration dissolved oxygen levels in constructed channels at the Miami Wetlands during winter 2012-2016. Precipitation and tidal data also included. Discontinuous lines indicate missing data due to low water levels.



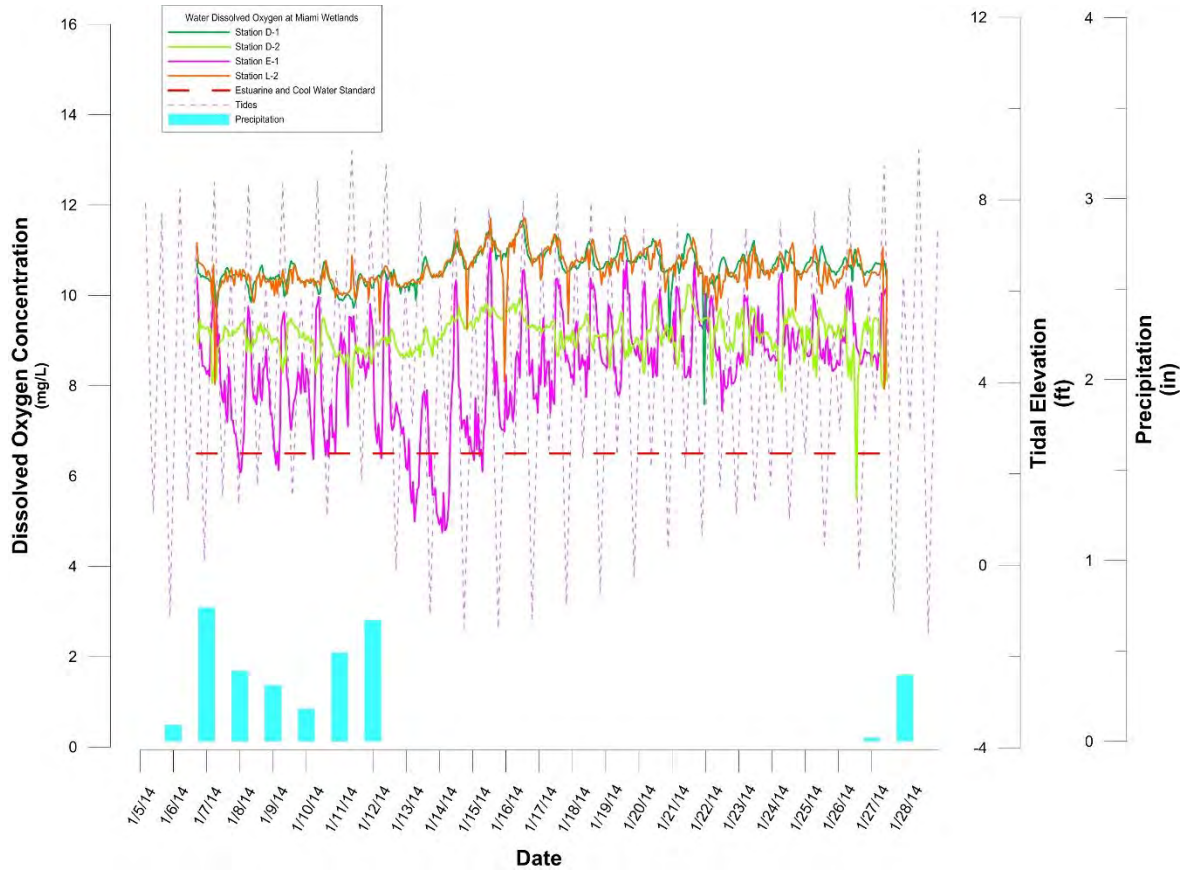
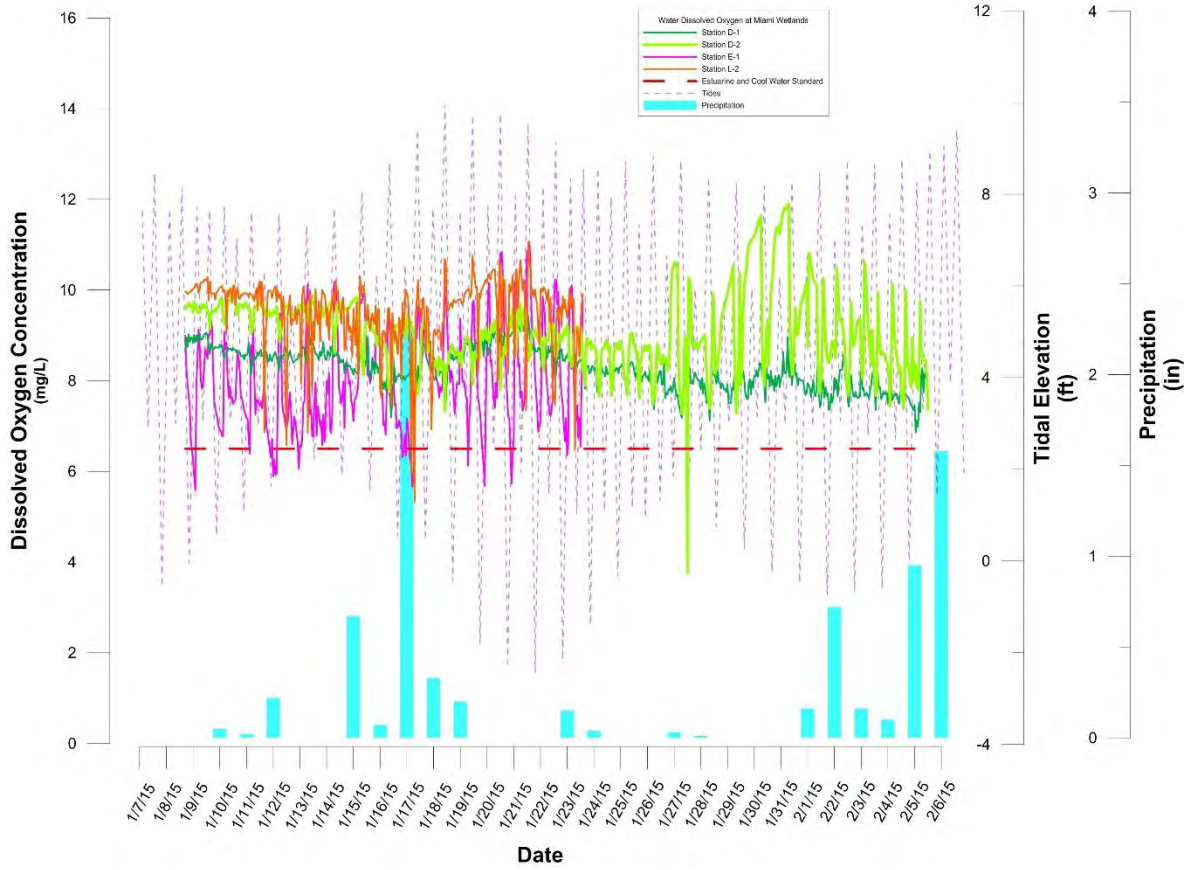


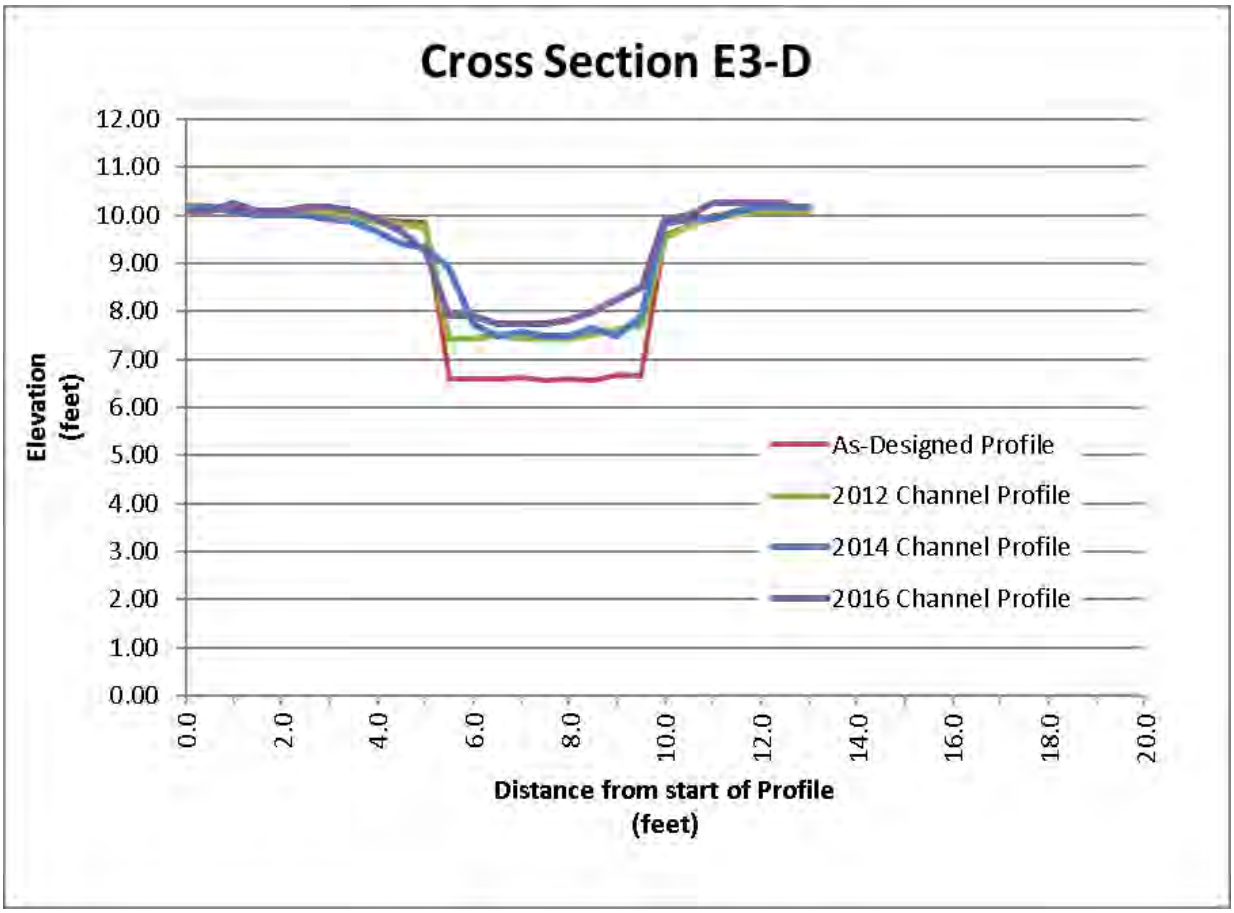
Figure E4. Continued



Appendix F

Graphs depicting cross sections of constructed channels at the Miami Wetlands

Figure F1. Graphs depicting cross sections of constructed tidal channels (E channel system) at the Miami Wetlands.



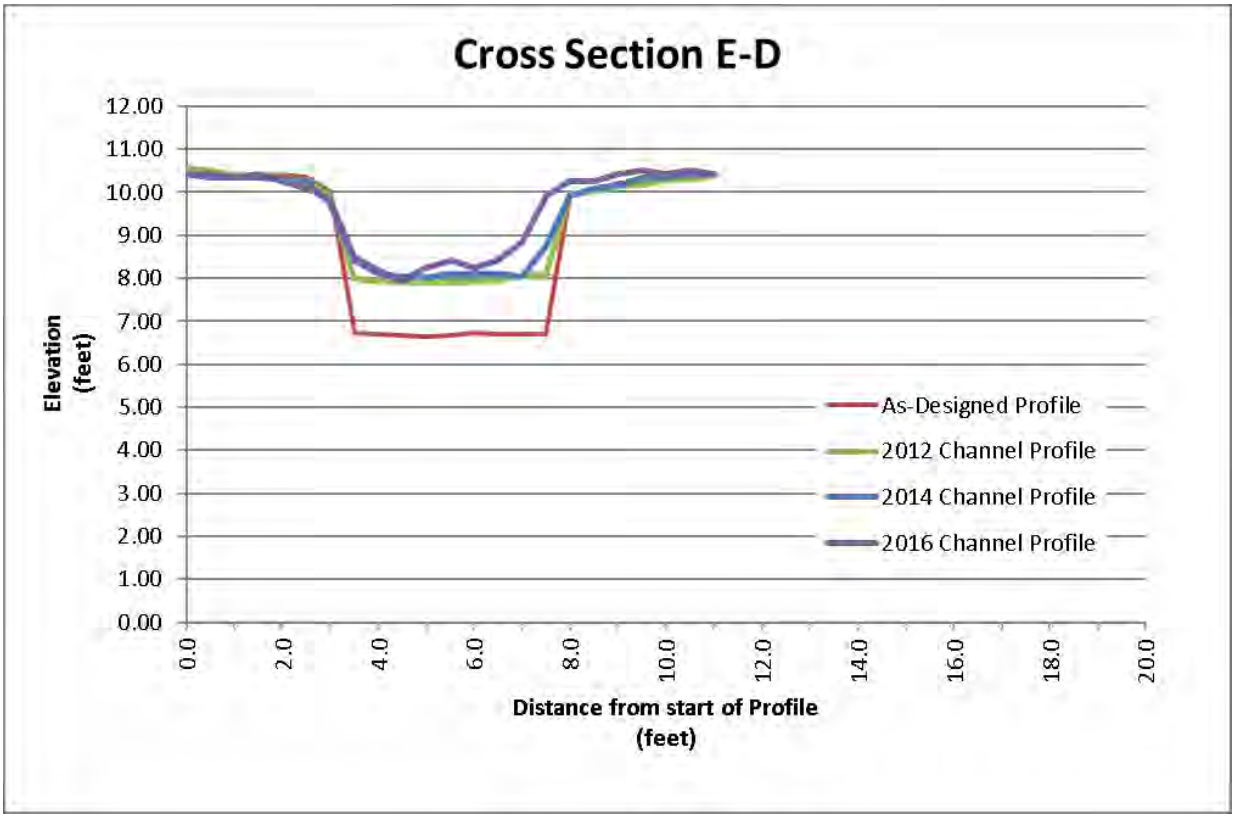
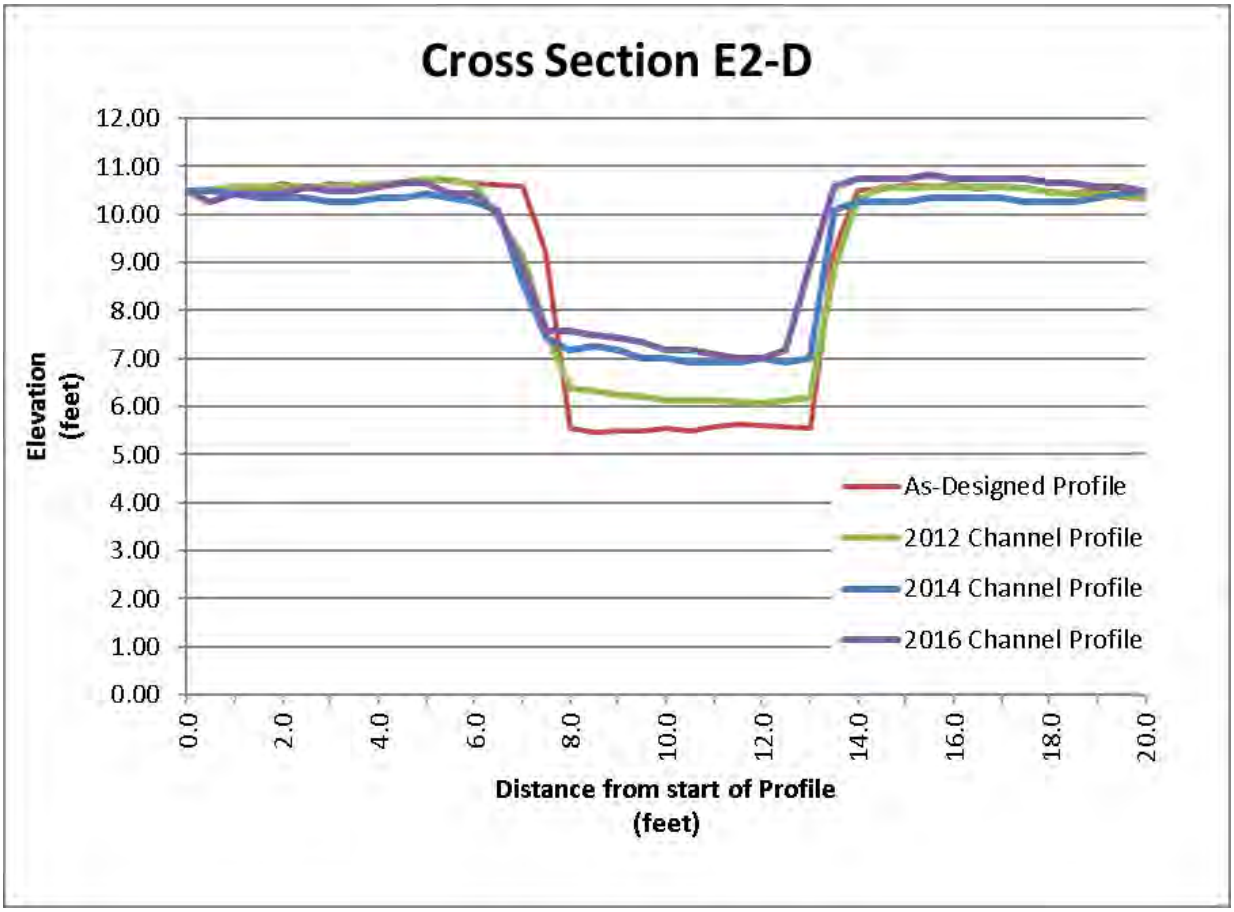


Figure F1. continued



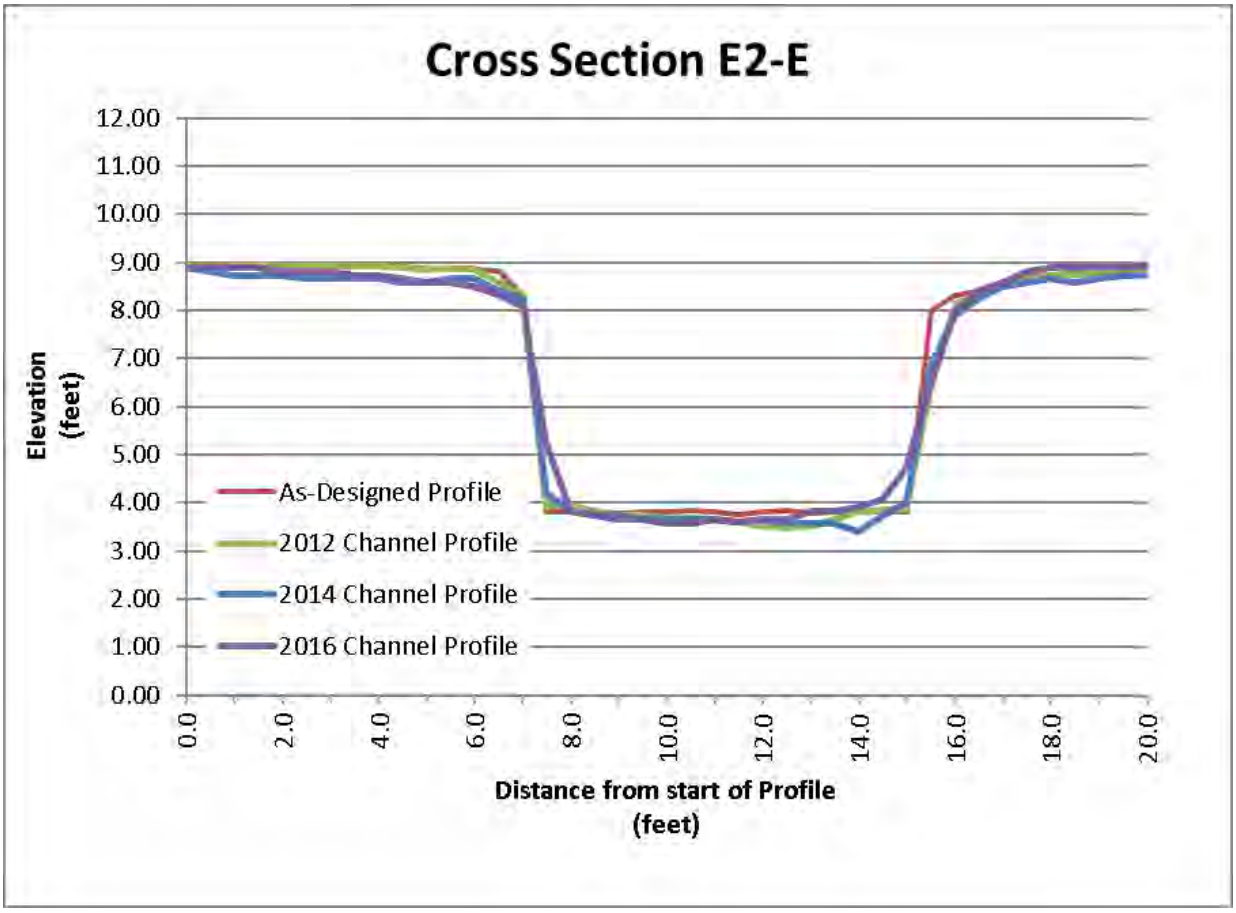


Figure F1. continued

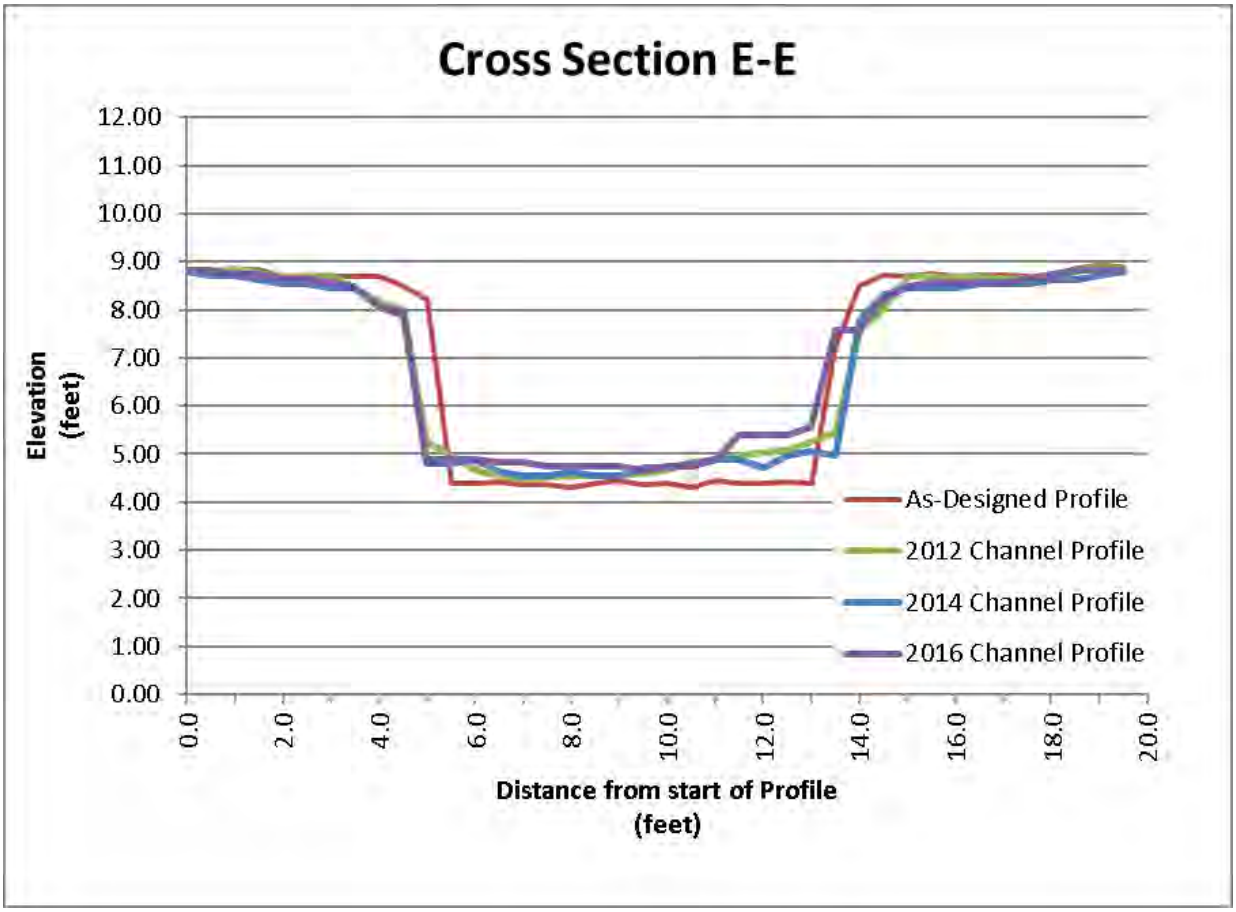
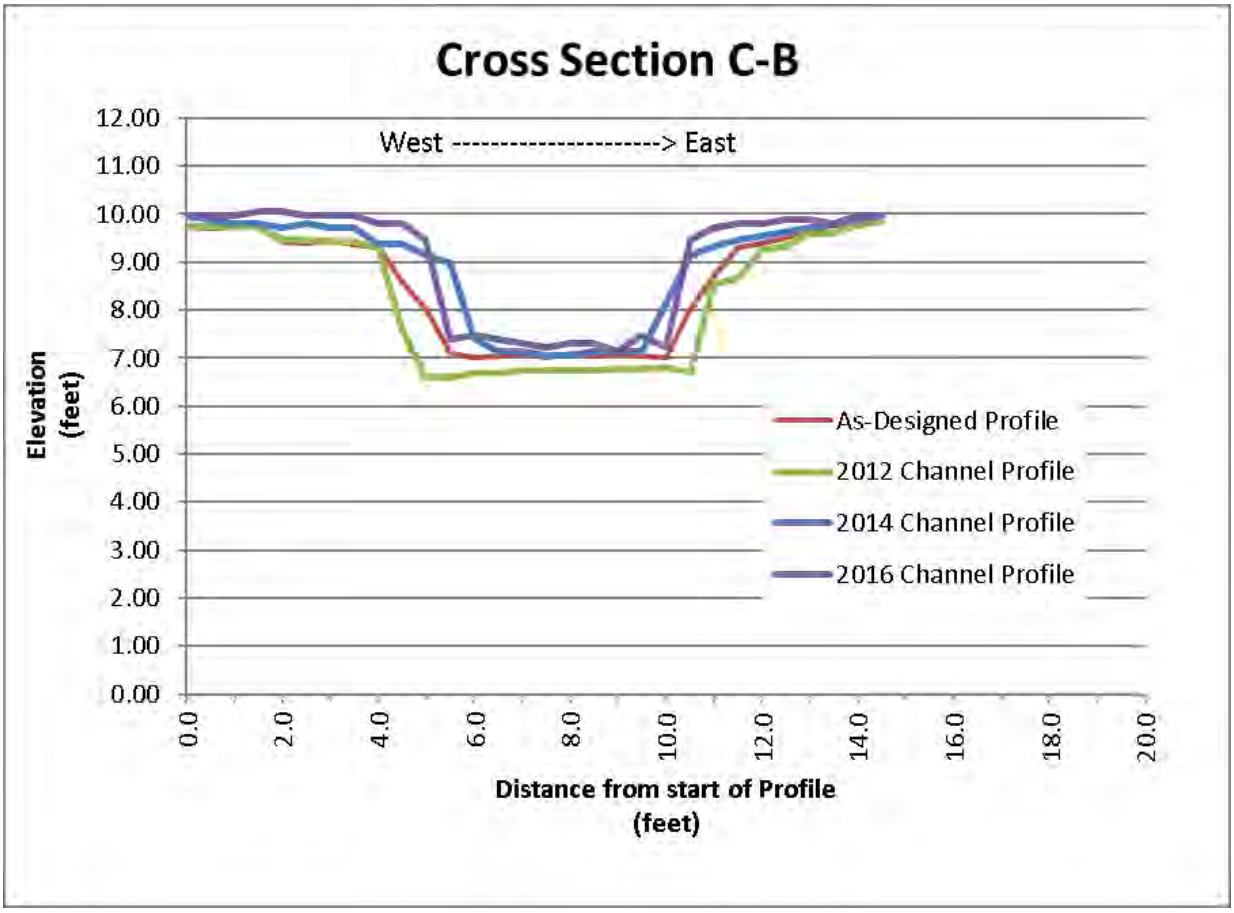


Figure F2. Graphs depicting cross sections of constructed stream channels (Hobson-Struby channel system) at the Miami Wetlands.



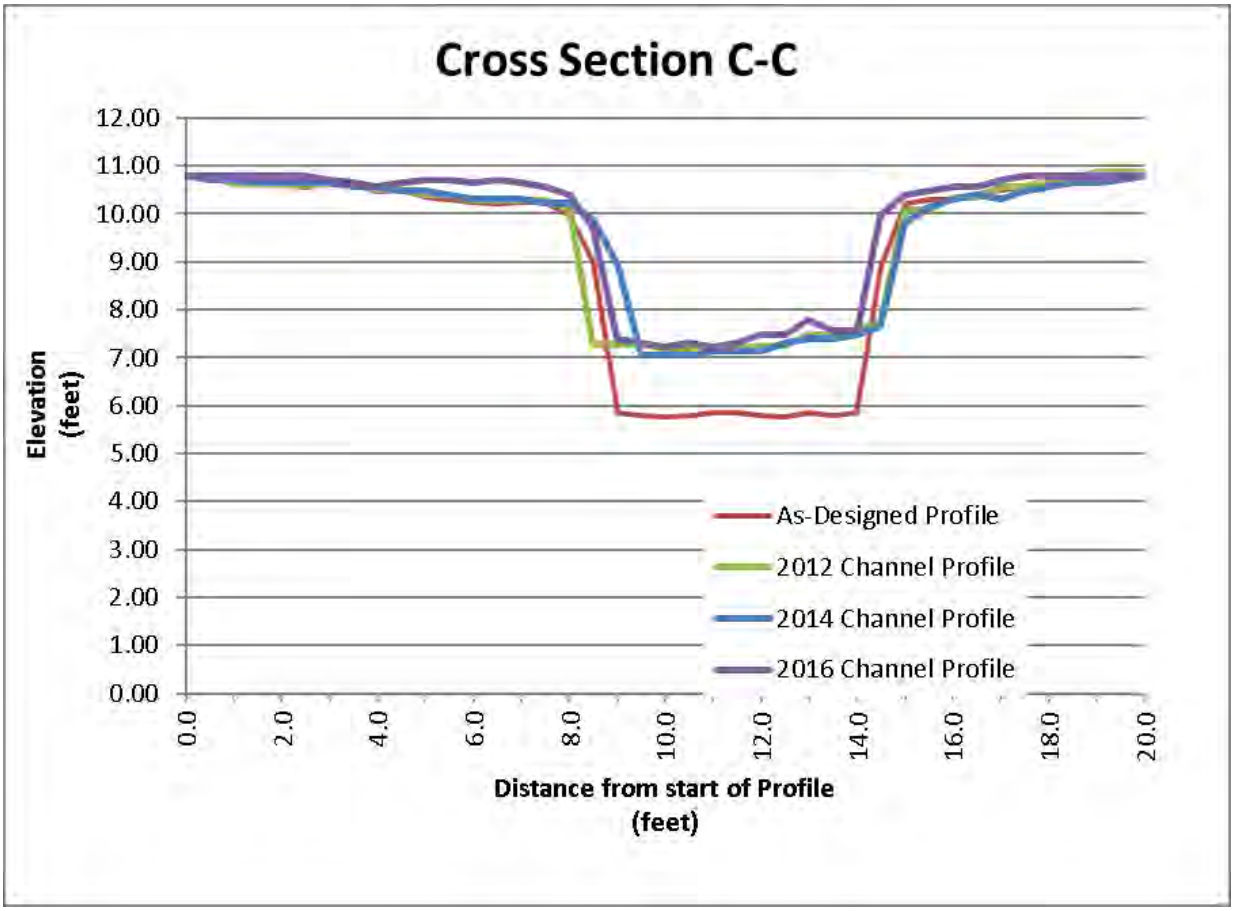
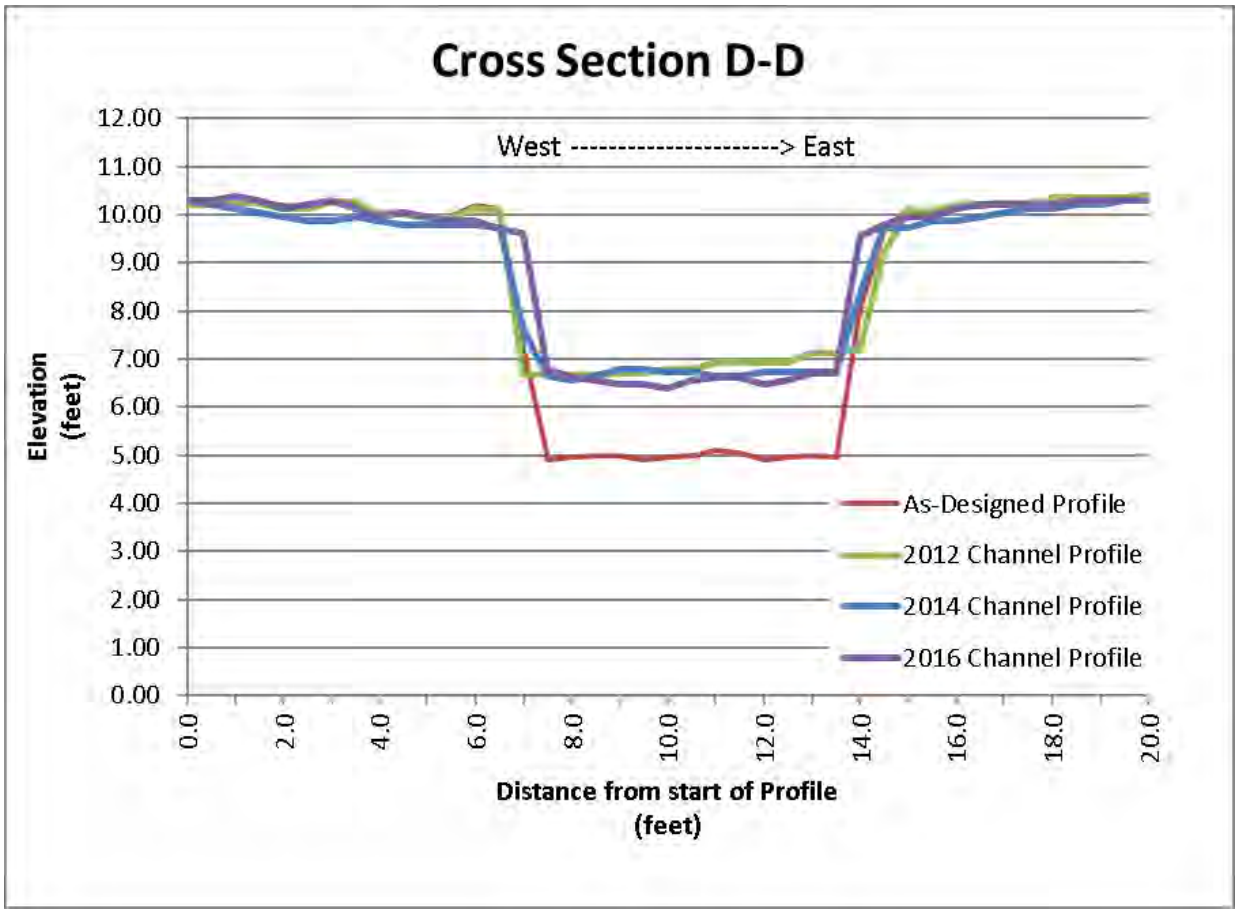
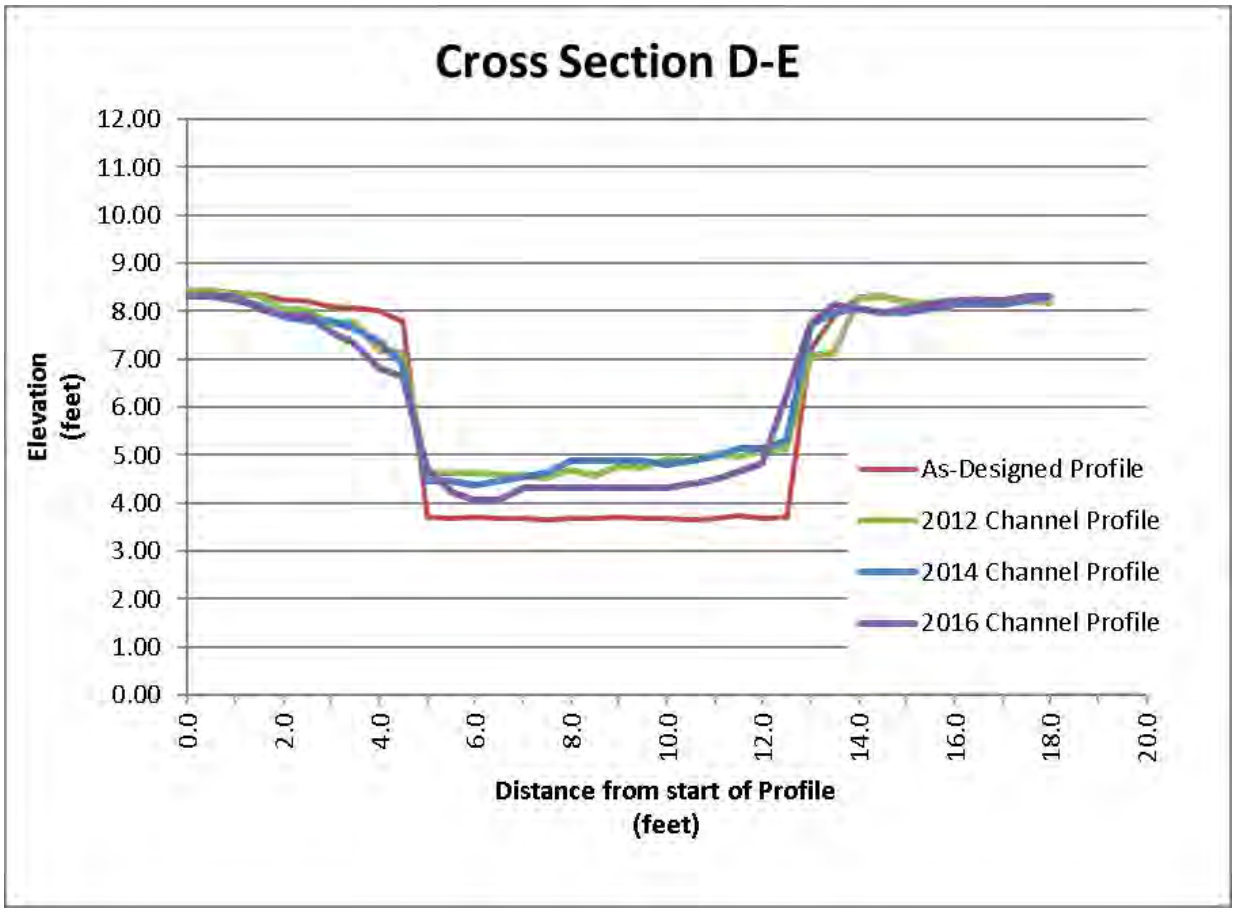


Figure F2. continued





Appendix G

Google Earth© images of Miami Wetlands from 2005 - 2017

Miami Wetlands Restoration Site

Pre-Restoration

Miami Wetlands Restoration Site
During-Restoration

Miami Wetlands Restoration Site
Post-Restoration—Year 1

Scale: 1 inch = 261 feet

Image Date: July 2012

Miami Wetlands Restoration Site
Post-Restoration—Year 3

Scale: 1 inch = 261 feet

Image Date: July 2014

Miami Wetlands Restoration Site
Post-Restoration—Year 5

Scale: 1 inch = 261 feet

Image Date: August 2016

Miami Wetlands Restoration Site
Post-Restoration—Year 6

Scale: 1 inch = 261 feet

Image Date: June 2017

Appendix H

Summary tables for line intercept vegetation transects at Miami Wetlands 2010, 2012, 2014 and 2016

Table H1. Line intercept data summary for pre-construction vegetation survey (2010).

	% Cover by Transect (Total Cover/Relative Cover)									Mean (Total/Relative)	SE (Total/Relative)
	A	B	C	D	E	F	G	H	I		
Open H_2O	0.7 / NA	3.3 / NA	2.3 / NA	2.6 / NA	5.9 / NA	8.9 / NA	15.1 / NA	5.3 / NA	0.0 / NA	**4.9 / NA**	**1.6 / NA**
Bare Ground	-	-	-	-	0.1 / NA	-	-	-	-	**0.0 / NA**	**0.0 / NA**
Bentgrass spp.	-	-	-	-	-	-	-	-	0.4 / 0.4	**0.0 / 0.0**	**0.0 / 0.0**
Red Alder	-	-	-	-	-	-	3.6 / 4.2	-	-	**0.4 / 0.5**	**0.4 / 0.5**
Pacific Silverweed	-	-	-	-	-	-	-	2.6 / 2.8	-	**0.3 / 0.3**	**0.3 / 0.3**
Lady Fern	-	-	-	-	-	-	-	-	2.4 / 2.4	**0.3 / 0.3**	**0.3 / 0.3**
Slender-foot Sedge	-	-	-	-	-	-	-	-	0.1 / 0.1	**0.0 / 0.0**	**0.0 / 0.0**
Slough Sedge	7.3 / 7.3	5.6 / 5.8	10.9 / 11.2	5.5 / 5.6	11.5 / 12.2	6.5 / 7.1	42.5 / 50.0	10.2 / 10.8	24.2 / 24.2	**13.8 / 14.9**	**4.1 / 4.8**
Water-starwort	-	-	-	-	-	-	-	0.6 / 0.6	-	**0.1 / 0.1**	**0.1 / 0.1**
Common Foxglove	-	-	0.6 / 0.6	-	-	-	-	-	-	**0.1 / 0.1**	**0.1 / 0.1**
Spikerush species	-	-	-	-	-	-	2.2 / 2.5	3.0 / 3.1	-	**0.6 / 0.6**	**0.4 / 0.4**
Watson Willowherb	-	-	-	-	-	-	-	-	0.2 / 0.2	**0.0 / 0.0**	**0.0 / 0.0**
Common Horsetail	-	-	-	-	-	-	-	-	0.2 / 0.2	**0.0 / 0.0**	**0.0 / 0.0**
Tall Fescue	-	-	-	-	6.4 / 6.8	18.0 / 19.8	-	-	-	**2.7 / 2.9**	**2.0 / 2.2**
Bedstraw	-	-	-	-	-	-	-	1.3 / 1.4	-	**0.1 / 0.2**	**0.1 / 0.2**
Touch-Me-Not species	-	-	-	-	-	-	-	-	1.9 / 1.9	**0.2 / 0.2**	**0.2 / 0.2**
Baltic Rush	-	-	-	-	2.0 / 2.1	-	-	-	-	**0.2 / 0.2**	**0.2 / 0.2**
Soft Rush	0.3 / 0.3	5.9 / 6.1	0.4 / 0.4	-	0.1 / 0.1	-	-	-	-	**0.8 / 0.8**	**0.6 / 0.7**
Lawn	-	-	-	-	-	-	-	-	4.4 / 4.4	**0.5 / 0.5**	**0.5 / 0.5**
Birdsfoot Trefoil	-	2.4 / 2.5	-	-	-	-	-	-	-	**0.3 / 0.3**	**0.3 / 0.3**
Black Twinberry	-	-	-	-	-	-	-	-	4.0 / 4.0	**0.4 / 0.4**	**0.4 / 0.4**
Skunk Cabbage	1.6 / 1.6	1.9 / 2.0	-	-	-	-	-	0.5 / 0.6	-	**0.4 / 0.5**	**0.3 / 0.3**
Reed Canarygrass	90.2 / 90.8	72.1 / 74.5	85.8 / 87.8	89.5 / 91.8	74.0 / 78.8	48.2 / 52.9	35.3 / 41.6	45.6 / 48.2	18.4 / 18.4	**62.1 / 65.0**	**8.7 / 8.6**
Rough Bluegrass	-	-	-	-	-	2.5 / 2.7	-	-	-	**0.3 / 0.3**	**0.3 / 0.3**
Creeping Buttercup	-	-	-	-	-	-	-	-	19.4 / 19.4	**2.2 / 2.2**	**2.2 / 2.2**
Blackberry species	-	6.7 / 6.9	-	2.5 / 2.5	-	-	-	3.0 / 3.2	19.3 / 19.3	**3.5 / 3.5**	**2.1 / 2.1**
Willow species	-	2.1 / 2.1	-	-	-	16.0 / 17.5	-	-	3.3 / 3.3	**2.4 / 2.5**	**1.7 / 1.9**
Red Elderberry	-	-	-	-	-	-	-	-	1.9 / 1.9	**0.2 / 0.2**	**0.2 / 0.2**
Small-fruited Bulrush	-	-	-	-	-	-	-	13.6 / 14.3	-	**1.5 / 1.6**	**1.5 / 1.6**
Cattail	-	-	-	-	-	-	-	14.3 / 15.1	-	**1.6 / 1.7**	**1.6 / 1.7**
Giant Vetch	-	-	-	-	-	-	1.4 / 1.7	-	-	**0.2 / 0.2**	**0.2 / 0.2**
Total Vegetation Cover for Transect	**99.3%**	**96.7%**	**97.7%**	**97.4%**	**94.0%**	**91.1%**	**84.9%**	**94.7%**	**100.0%**	**95.1%**	**1.6%**
Total Number of Dominant Species	**4**	**7**	**4**	**3**	**5**	**5**	**5**	**10**	**14**	**6.3**	**1.2**

Table H2. Line intercept data summary for first post-construction vegetation survey (2012).

	% Cover by Transect (Total Cover/Relative Cover)									Mean (Total/Relative)	SE (Total/Relative)
	A	B	C	D	E	F	G	H	I		
Open H_2O	4.1 / NA	2.2 / NA	1.3 / NA	8.2 / NA	7.9 / NA	8.0 / NA	15.3 / NA	17.6 / NA	-	**7.2 / NA**	**2.0 / NA**
Bare Ground	2.8 / NA	1.9 / NA	1.1 / NA	-	-	-	-	-	-	**0.6 / NA**	**0.4 / NA**
Red Alder	-	-	-	-	-	-	5.9 / 6.9	-	-	**0.7 / 0.8**	**0.7 / 0.8**
Lady Fern	-	-	-	-	-	-	-	0.8 / 0.9	-	**0.1 / 0.1**	**0.1 / 0.1**
Slough Sedge	9.4 / 10.1	2.6 / 2.7	3.0 / 3.0	2.3 / 2.5	9.4 / 10.2	11.2 / 12.1	45.0 / 53.2	21.0 / 25.5	17.6 / 17.6	**13.5 / 15.2**	**4.5 / 5.4**
Hedge Bindweed	-	-	-	-	-	0.2 / 0.3	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Douglas Spirea	0.1 / 0.1	-	-	-	-	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Spikerush species	-	-	-	-	-	-	3.2 / 3.7	-	-	**0.4 / 0.4**	**0.4 / 0.4**
Common Horsetail	-	-	-	-	-	-	-	-	6.7 / 6.7	**0.7 / 0.7**	**0.7 / 0.7**
Tall Fescue	-	-	-	-	12.1 / 13.1	2.0 / 2.2	-	-	-	**1.6 / 1.7**	**1.3 / 1.4**
Western Brome	-	-	0.4 / 0.4	-	-	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Meadow Barley	-	11.1 / 11.6	11.3 / 11.6	5.8 / 6.3	8.9 / 9.7	-	-	-	-	**4.1 / 4.3**	**1.7 / 1.8**
Touch-Me-Not species	4.4 / 4.7	-	-	-	-	-	-	-	-	**0.5 / 0.5**	**0.5 / 0.5**
Baltic Rush	0.5 / 0.5	-	0.8 / 0.9	-	2.0 / 2.2	-	-	1.5 / 1.8	-	**0.5 / 0.6**	**0.3 / 0.3**
Soft Rush	5.1 / 5.5	3.5 / 3.6	5.2 / 5.4	5.5 / 6.0	2.7 / 2.9	-	-	3.6 / 4.3	-	**2.8 / 3.1**	**0.8 / 0.8**
Lawn	-	-	-	-	-	-	-	-	5.9 / 5.9	**0.7 / 0.7**	**0.7 / 0.7**
Birdsfoot Trefoil	-	-	-	2.6 / 2.8	3.7 / 4.0	-	-	-	-	**0.7 / 0.8**	**0.5 / 0.5**
Black Twinberry	0.1 / 0.1	0.8 / 0.8	0.3 / 0.3	-	-	-	-	-	6.7 / 6.7	**0.9 / 0.9**	**0.7 / 0.7**
Skunk Cabbage	3.1 / 3.3	-	-	-	-	-	-	-	1.5 / 1.5	**0.5 / 0.5**	**0.4 / 0.4**
Reed Canarygrass	67.0 / 71.9	77.4 / 80.7	74.0 / 75.8	72.9 / 79.4	52.3 / 56.8	55.6 / 60.4	29.3 / 34.6	45.6 / 55.4	49.8 / 49.8	**58.2 / 62.7**	**5.3 / 5.2**
Pacific Silverweed	-	-	-	-	-	5.7 / 6.2	-	-	-	**0.6 / 0.7**	**0.6 / 0.7**
Creeping Buttercup	-	-	-	-	-	-	-	-	0.5 / 0.5	**0.1 / 0.1**	**0.1 / 0.1**
Blackberry species	-	-	-	-	-	-	-	-	4.4 / 4.4	**0.5 / 0.5**	**0.5 / 0.5**
Willow species	1.9 / 2.1	0.4 / 0.4	0.3 / 0.3	-	-	17.3 / 18.8	-	-	2.2 / 2.2	**2.5 / 2.6**	**1.9 / 2.0**
Red Elderberry	-	-	-	-	-	-	-	-	1.3 / 1.3	**0.1 / 0.1**	**0.1 / 0.1**
Small-fruited Bulrush	1.6 / 1.7	0.1 / 0.2	1.4 / 1.4	2.8 / 3.1	0.8 / 0.8	-	-	8.3 / 10.0	3.5 / 3.5	**2.1 / 2.3**	**0.9 / 1.1**
Narrowleaf Burreed	-	-	0.4 / 0.4	-	-	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Sitka Spruce	-	-	0.4 / 0.4	-	0.2 / 0.2	-	-	-	-	**0.1 / 0.1**	**0.0 / 0.0**
Giant Vetch	-	-	-	-	-	-	1.4 / 1.6	1.7 / 2.1	-	**0.3 / 0.4**	**0.2 / 0.3**
Total Vegetation Cover for Transect	**93.2%**	**95.9%**	**97.6%**	**91.8%**	**92.1%**	**92.0%**	**84.7%**	**82.4%**	**100.0%**	**92.2%**	**1.9%**
Total Number of Dominant Species	**10**	**7**	**11**	**6**	**9**	**6**	**5**	**7**	**11**	**8.0**	**0.8**

Table H3. Line intercept data summary for second post-construction vegetation survey (2014).

	% Cover by Transect (Total Cover/Relative Cover)									Mean (Total/Relative)	SE (Total/Relative)
	A	B	C	D	E	F	G	H	I		
Open H_2O	1.8 / NA	3.9 / NA	3.9 / NA	13.2 / NA	8.6 / NA	8.5 / NA	15.3 / NA	27.5 / NA	-	**9.2 / NA**	**2.9 / NA**
Bare Ground	-	-	-	-	-	-	4.5 / NA	-	-	**0.5 / NA**	**0.5 / NA**
Plant Litter	2.7 / NA	2.8 / NA	0.3 / NA	2.5 / NA	4.1 / NA	0.8 / NA	16.6 / NA	21.7 / NA	-	**5.7 / NA**	**2.6 / NA**
Sweet Vernal Grass	-	-	0.3 / 0.3	-	-	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Red Alder	-	-	-	-	-	-	0.9 / 1.4	-	-	**0.1 / 0.2**	**0.1 / 0.2**
Lady Fern	-	-	-	-	-	-	2.2 / 3.5	1.1 / 2.2	1.0 / 1.0	**0.5 / 0.7**	**0.3 / 0.4**
Water-starwort	-	-	-	-	-	-	1.3 / 2.1	-	-	**0.1 / 0.2**	**0.1 / 0.2**
Slough Sedge	4.8 / 5.0	1.2 / 1.3	2.6 / 2.7	2.0 / 2.4	0.5 / 0.5	10.3 / 11.4	9.0 / 14.1	15.3 / 30.1	6.7 / 6.7	**5.8 / 8.2**	**1.7 / 3.1**
Canada Thistle	-	-	-	-	0.2 / 0.2	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Red Osier Dogwood	-	-	0.2 / 0.2	0.3 / 0.3	0.3 / 0.3	-	-	-	-	**0.1 / 0.1**	**0.0 / 0.0**
Douglas Spirea	-	0.3 / 0.3	-	-	0.3 / 0.3	-	-	-	-	**0.1 / 0.1**	**0.0 / 0.0**
Spikerush species	-	-	0.1	0.3	-	-	1.8	-	-	**0.2 / 0.4**	**0.2 / 0.3**
Common Horsetail	-	-	-	-	-	-	-	-	1.0 / 1.0	**0.1 / 0.1**	**0.1 / 0.1**
Tall Fescue	-	-	-	-	5.4 / 6.1	2.0 / 2.2	-	-	-	**0.8 / 0.9**	**0.6 / 0.7**
Bedstraw	-	-	-	-	0.1 / 0.2	-	-	1.1 / 2.2	-	**0.1 / 0.3**	**0.1 / 0.2**
Cow Parsnip	-	-	0.3 / 0.3	-	-	-	0.4 / 0.7	-	-	**0.1 / 0.1**	**0.1 / 0.1**
Meadow Barley	-	-	0.2 / 0.2	-	2.4 / 2.7	-	-	-	-	**0.3 / 0.3**	**0.3 / 0.3**
Touch-Me-Not species	6.6 / 6.9	2.2 / 2.3	-	-	-	-	-	1.7 / 3.3	2.4 / 2.4	**1.4 / 1.7**	**0.7 / 0.8**
Arctic Rush	-	-	-	-	-	-	-	0.8 / 1.5	-	**0.1 / 0.2**	**0.1 / 0.2**
Baltic Rush	-	0.9 / 1.0	0.5 / 0.5	4.7 / 5.5	5.5 / 6.3	-	-	-	-	**1.3 / 1.5**	**0.7 / 0.9**
Soft Rush	11.7/12.3	1.5 / 1.6	1.1 / 1.1	1.0 / 1.2	1.0 / 1.2	1.8 / 2.0	-	-	-	**2.0 / 2.2**	**1.2 / 1.3**
Lawn	-	-	-	-	-	-	-	-	5.1 / 5.1	**0.6 / 0.6**	**0.6 / 0.6**
Birdsfoot Trefoil	-	1.5 / 1.6	0.4 / 0.4	0.4 / 0.5	0.7 / 0.8	-	-	0.8 / 1.5	-	**0.4 / 0.5**	**0.2 / 0.2**
Black Twinberry	-	-	0.6 / 0.7	1.8 / 2.1	1.0 / 1.1	-	8.1 / 12.7	-	6.1 / 6.1	**2.0 / 2.5**	**1.0 / 1.4**
Skunk Cabbage	2.3 / 2.4	-	-	-	-	-	-	-	-	**0.3 / 0.3**	**0.3 / 0.3**
Reed Canarygrass	64.6 / 67.7	82.8/88.8	78.6/82.0	71.7/85.1	60.3/69.1	49.3 / 54.4	19.1/30.0	20.0/39.4	44.6/44.6	**54.6 / 62.3**	**7.8 / 7.1**
Sitka Spruce	-	0.4 / 0.4	-	-	1.4 / 1.6	-	-	-	0.2 / 0.2	**0.2 / 0.3**	**0.2 / 0.2**
Pacific Silverweed	-	-	-	-	-	8.8 / 9.7	-	-	-	**1.0 / 1.1**	**1.0 / 1.1**
Kentucky Bluegrass	-	-	-	-	-	1.8 / 2.0	-	-	-	**0.2 / 0.2**	**0.2 / 0.2**
Blackberry species	-	-	-	-	-	-	-	-	12.9/12.9	**1.4 / 1.4**	**1.4 / 1.4**
Red Elderberry	-	-	-	-	-	-	-	-	2.3 / 2.3	**0.3 / 0.3**	**0.3 / 0.3**
Willow species	3.4 / 3.6	0.7 / 0.7	3.7 / 3.9	0.7 / 0.8	4.8 / 5.4	16.5 / 18.2	-	-	5.1 / 5.1	**3.9 / 4.2**	**1.7 / 1.9**
Small-fruited Bulrush	2.0 / 2.1	1.9 / 2.1	7.2 / 7.6	1.3 / 1.6	3.6 / 4.1	-	20.7/32.5	10.0/19.7	12.4/12.4	**6.6 / 9.1**	**2.3 / 3.6**
Total Cover for Transect	**95.4%**	**93.2%**	**95.8%**	**84.3%**	**87.4%**	**90.7%**	**63.6%**	**50.8%**	**100.0%**	**84.6%**	**5.5%**
Total Number of Dominant Species	**7**	**10**	**13**	**10**	**15**	**7**	**9**	**8**	**12**	**10.1**	**0.9**

Table H4. Line intercept data summary for second post-construction vegetation survey (2016).

2016	% Cover by Transect (Total Cover/Relative Cover)									Mean (Total/Relative)	SE (Total/Relative)
	A	B	C	D	E	F	G	H	I		
Open H_2O	2.9 / NA	2.2 / NA	3.5 / NA	11.7 / NA	8.1 / NA	7.2 / NA	6.7 / NA	12.9 / NA	0.0 / NA	**6.1 / NA**	**1.5 / NA**
Bare Ground	0.6 / NA	-	-	-	-	-	12.6 / NA	0.0 / NA	1.7 / NA	**1.7 / NA**	**1.4 / NA**
Pacific Silverweed	-	-	-	-	-	6.0 / 6.5	-	-	-	**0.7 / 0.7**	**0.7 / 0.7**
Red Alder	2.1 / 2.1	3.7 / 3.8	-	-	-	-	1.4 / 1.8	-	-	**0.8 / 0.9**	**0.4 / 0.5**
Lady Fern	-	0.2 / 0.2	-	-	-	-	1.3 / 1.7	2.2 / 2.5	6.4 / 6.5	**1.1 / 1.2**	**0.7 / 0.7**
Slough Sedge	11.8 / 12.2	3.3 / 3.3	6.2 / 6.4	2.9 / 3.3	3.3 / 3.6	13.5 / 14.5	11.2 / 13.9	17.5 / 20.1	7.1 / 7.2	**8.5 / 9.4**	**1.7 / 2.0**
Hedge Bindweed	-	-	-	-	-	-	-	1.7 / 1.9	-	**0.2 / 0.2**	**0.2 / 0.2**
Red-osier Dogwood	-	-	-	0.1 / 0.2	-	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Orchardgrass	-	-	-	-	-	0.2 / 0.3	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Tufted Hairgrass	-	-	0.3 / 0.3	-	-	-	-	-	-	**0.0 / 0.0**	**0.0 / 0.0**
Spikerush species	-	-	-	-	-	-	7.2 / 8.9	4.3 / 5.0	-	**1.3 / 1.5**	**0.9 / 1.1**
Tall Fescue	-	-	-	-	3.8 / 4.1	1.7 / 1.8	-	-	-	**0.6 / 0.6**	**0.5 / 0.5**
Touch-me-Not species	0.7 / 0.7	-	-	-	-	-	-	-	4.4 / 4.4	**0.6 / 0.6**	**0.5 / 0.5**
Arctic Rush	-	-	-	-	-	-	-	0.8 / 0.9	-	**0.1 / 0.1**	**0.1 / 0.1**
Baltic Rush	0.5 / 0.5	-	0.8 / 0.9	-	2.0 / 2.2	-	-	1.5 / 1.8	-	**0.5 / 0.6**	**0.3 / 0.3**
Soft Rush	15.1 / 15.7	1.1 / 1.2	2.6 / 2.7	3.8 / 4.3	3.9 / 4.3	0.3 / 0.4	-	1.1 / 1.3	-	**3.1 / 3.3**	**1.6 / 1.6**
Lawn	-	-	-	-	-	-	-	-	2.7 / 2.7	**0.3 / 0.3**	**0.3 / 0.3**
Birdsfoot Trefoil	-	0.2 / 0.2	-	-	4.4 / 4.8	1.8 / 2.0	-	-	-	**0.7 / 0.8**	**0.5 / 0.6**
Black Twinberry	-	1.2 / 1.3	2.3 / 2.4	4.7 / 5.4	3.7 / 4.0	-	9.0 / 11.1	6.0 / 6.9	-	**3.0 / 3.5**	**1.0 / 1.3**
Skunk Cabbage	2.3 / 2.3	-	-	-	-	-	-	-	-	**0.3 / 0.3**	**0.3 / 0.3**
Reed Canarygrass	53.3 / 55.2	72.5 / 74.1	72.6 / 75.2	60.0 / 68.0	53.8 / 58.6	45.3 / 48.8	31.0 / 38.5	22.3 / 25.6	46.2 / 47.0	**50.8 / 54.6**	**5.7 / 5.5**
Sitka Spruce	-	0.5 / 0.5	1.5 / 1.6	0.7 / 0.8	2.8 / 3.0	-	-	1.9 / 2.2	-	**0.8 / 0.9**	**0.3 / 0.4**
Western Sword Fern	-	-	-	-	-	-	3.1 / 3.8	-	-	**0.3 / 0.4**	**0.3 / 0.4**
Black Cottonwood	-	1.6 / 1.6	-	4.2 / 4.8	-	6.0 / 6.5	-	-	-	**1.3 / 1.4**	**0.8 / 0.8**
Cascara	-	-	-	1.3 / 1.5	-	-	-	3.4 / 3.9	2.7 / 2.7	**0.8 / 0.9**	**0.4 / 0.5**
Blackberry species	-	-	-	0.1 / 0.1	-	-	-	-	12.6 / 12.8	**1.4 / 1.4**	**1.4 / 1.4**
Red Elderberry	-	-	-	-	-	-	-	-	8.2 / 8.3	**0.9 / 0.9**	**0.9 / 0.9**
Willow species	6.4 / 6.7	5.0 / 5.1	4.7 / 4.9	-	6.0 / 6.6	18.2 / 19.6	2.4 / 3.0	1.7 / 1.9	7.7 / 7.8	**5.8 / 6.2**	**1.8 / 1.9**
Small-fruited Bulrush	5.2 / 5.4	7.1 / 7.2	4.8 / 4.9	6.9 / 7.9	4.5 / 4.9	-	13.9 / 17.3	17.5 / 20.1	-	**6.7 / 7.5**	**1.9 / 2.3**
Douglas Spirea	-	-	0.5 / 0.6	0.1 / 0.1	1.0 / 1.1	-	-	-	-	**0.2 / 0.2**	**0.1 / 0.1**
Piggy-back Plant	-	-	-	-	-	-	-	-	0.5 / 0.5	**0.1 / 0.1**	**0.1 / 0.1**
Giant Vetch	-	-	-	-	-	-	-	6.6 / 7.6	-	**0.7 / 0.8**	**0.7 / 0.8**
Total Vegetation Cover	**96.50%**	**97.80%**	**96.50%**	**88.30%**	**91.90%**	**92.80%**	**80.70%**	**87.10%**	**98.30%**	**92.20%**	**2.00%**
Total Number of Dominant Species	**7**	**13**	**10**	**12**	**12**	**8**	**9**	**13**	**10**	**10.4**	**0.7**

Appendix I

Line intercept data from 2010, 2012, 2014 and 2016 depicted as color-coded lines overlaid on aerial photographs of the Miami Wetlands

Figure I1. Aerial photograph of Miami Wetlands Restoration Project site with segmented polylines depicting 2010 pre-construction line intercept data. Non-native or invasive species are depicted in shades of red, purple and orange, while native species are greens. 2009 base image.

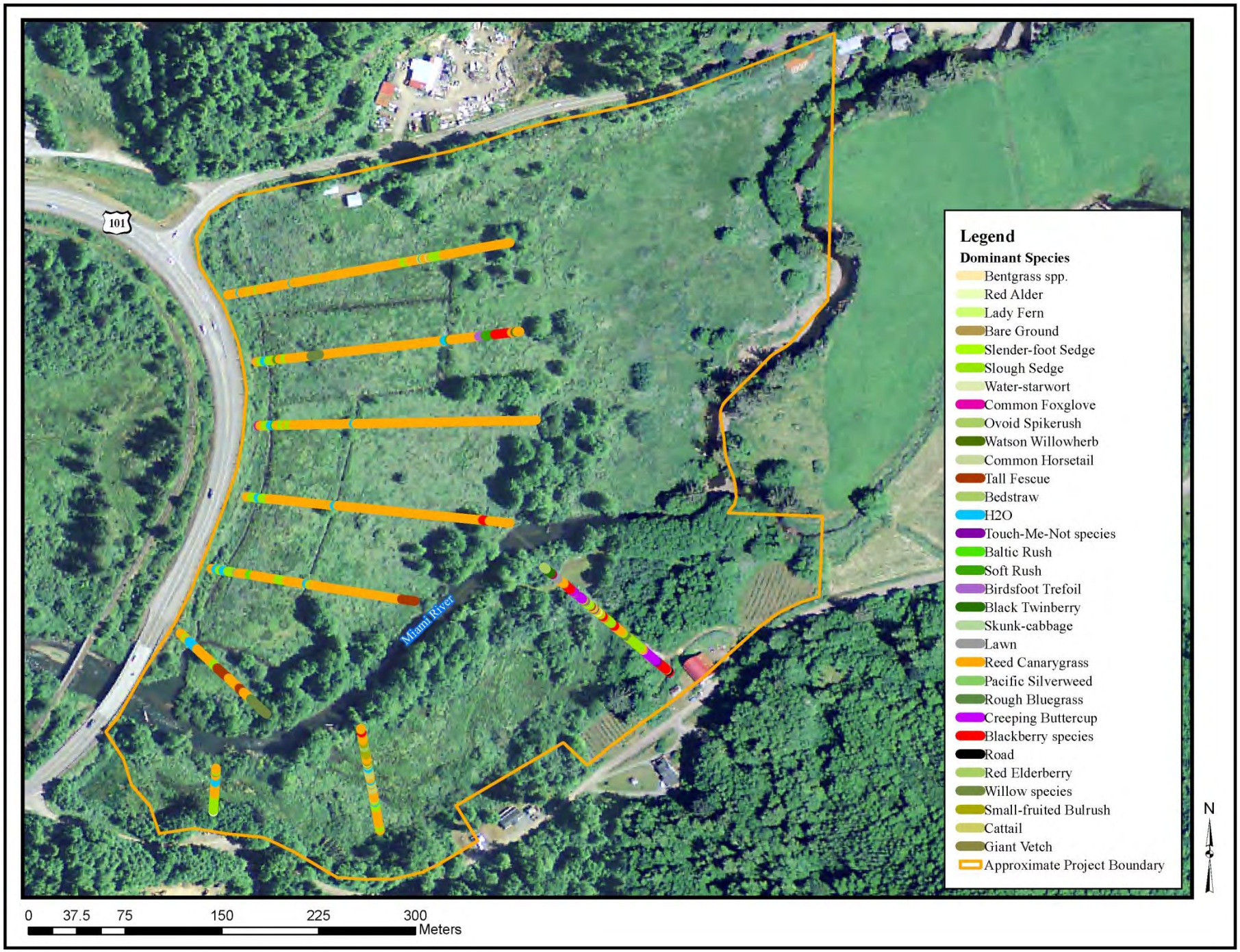


Figure I2. Aerial photograph of Miami Wetlands Restoration Project site with segmented polylines depicting 2012 post- construction line intercept data. Non-native or invasive species are depicted in shades of red, purple and orange, while native species are greens. 2012 base image.

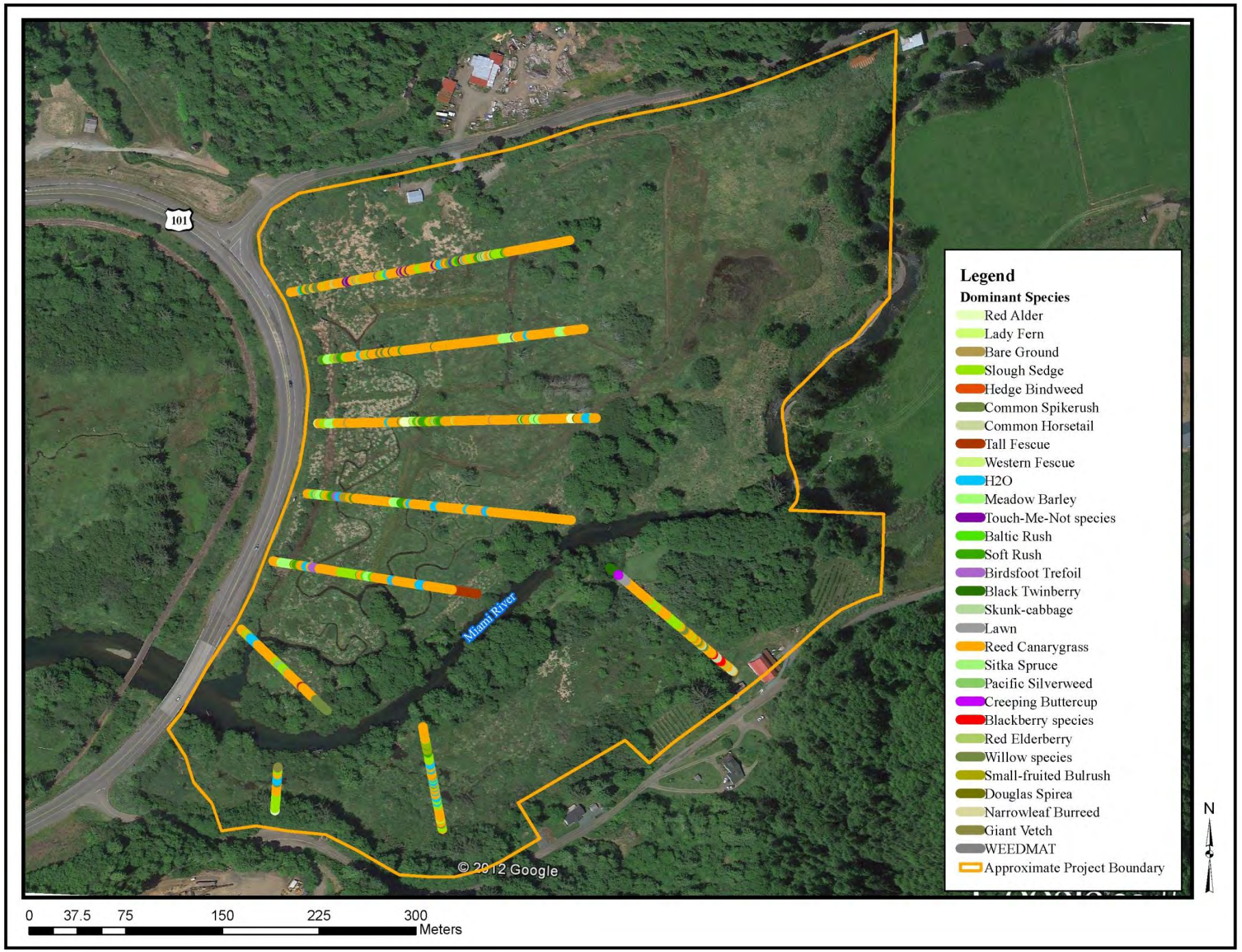


Figure I3. Aerial photograph of Miami Wetlands Restoration Project site with segmented polylines depicting 2014 post-construction line intercept data. Non-native or invasive species are depicted in shades of red, purple and orange, while native species are greens. 2014 base image.

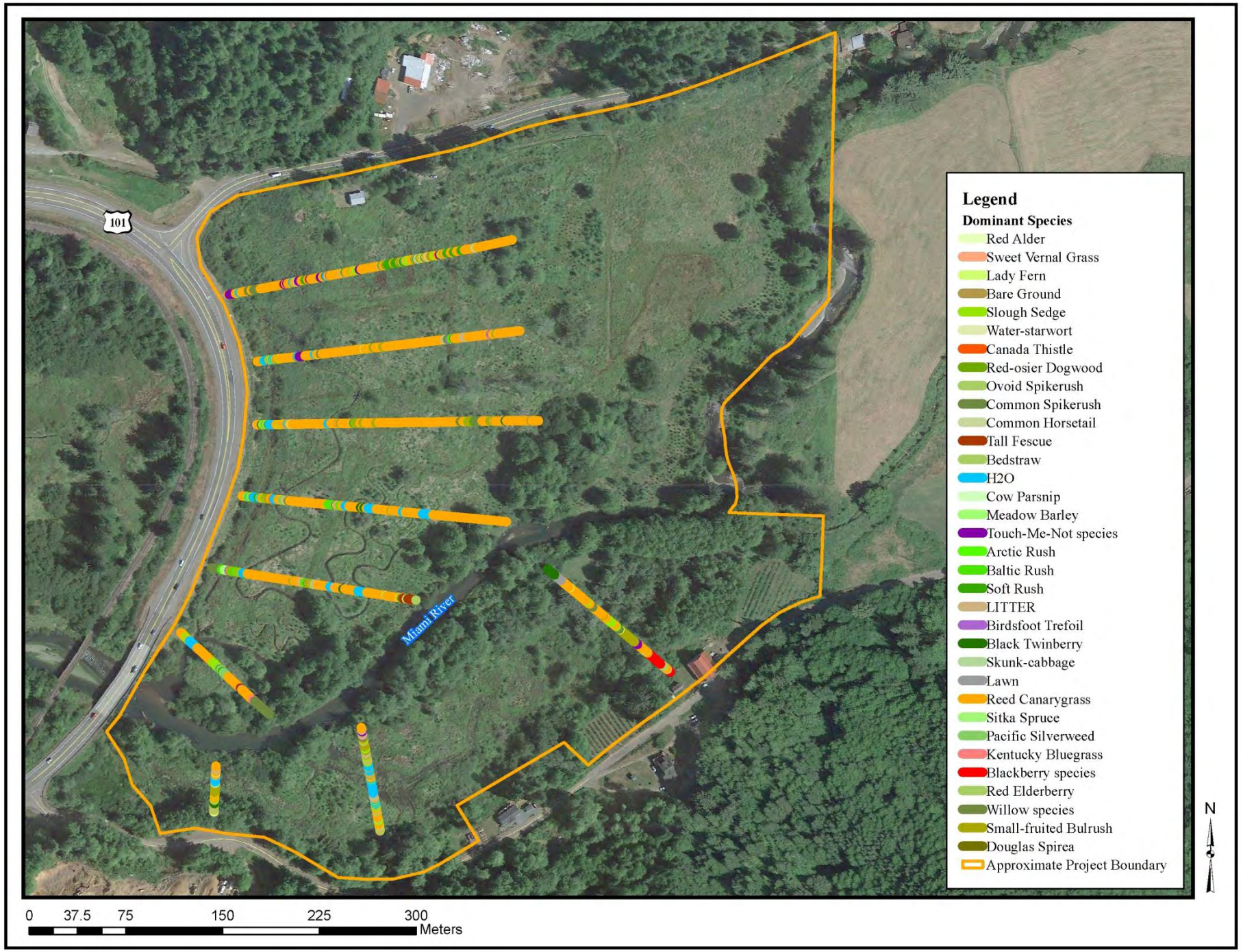
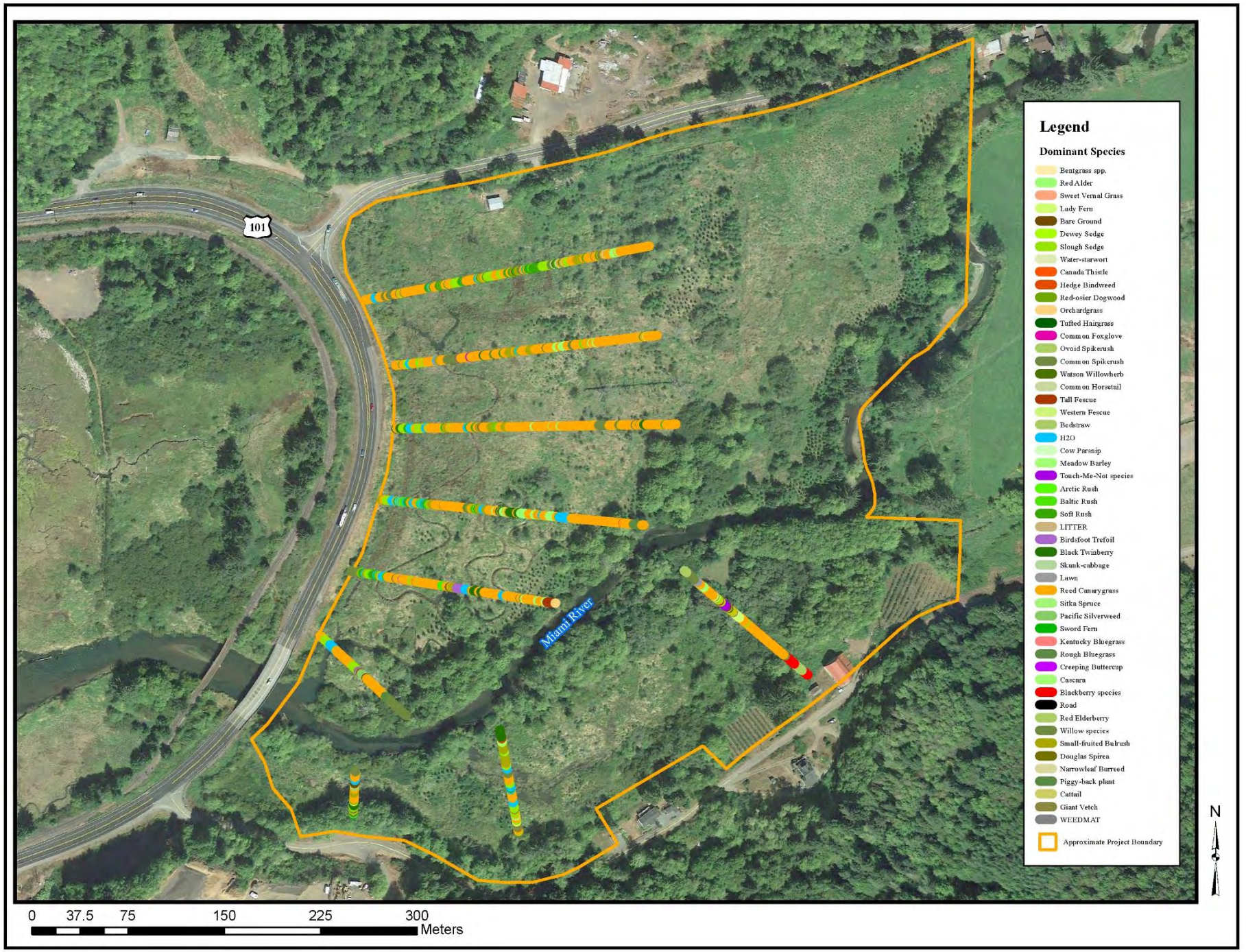


Figure I4. Aerial photograph of Miami Wetlands Restoration Project site with segmented polylines depicting 2016 post- construction line intercept data. Non-native or invasive species are depicted in shades of red, purple and orange, while native species are greens. 2016 base image.



Appendix J

Tranect end point photos from June 2010 and 2016 vegetation sampling

Transect A – East to West June 15, 2010

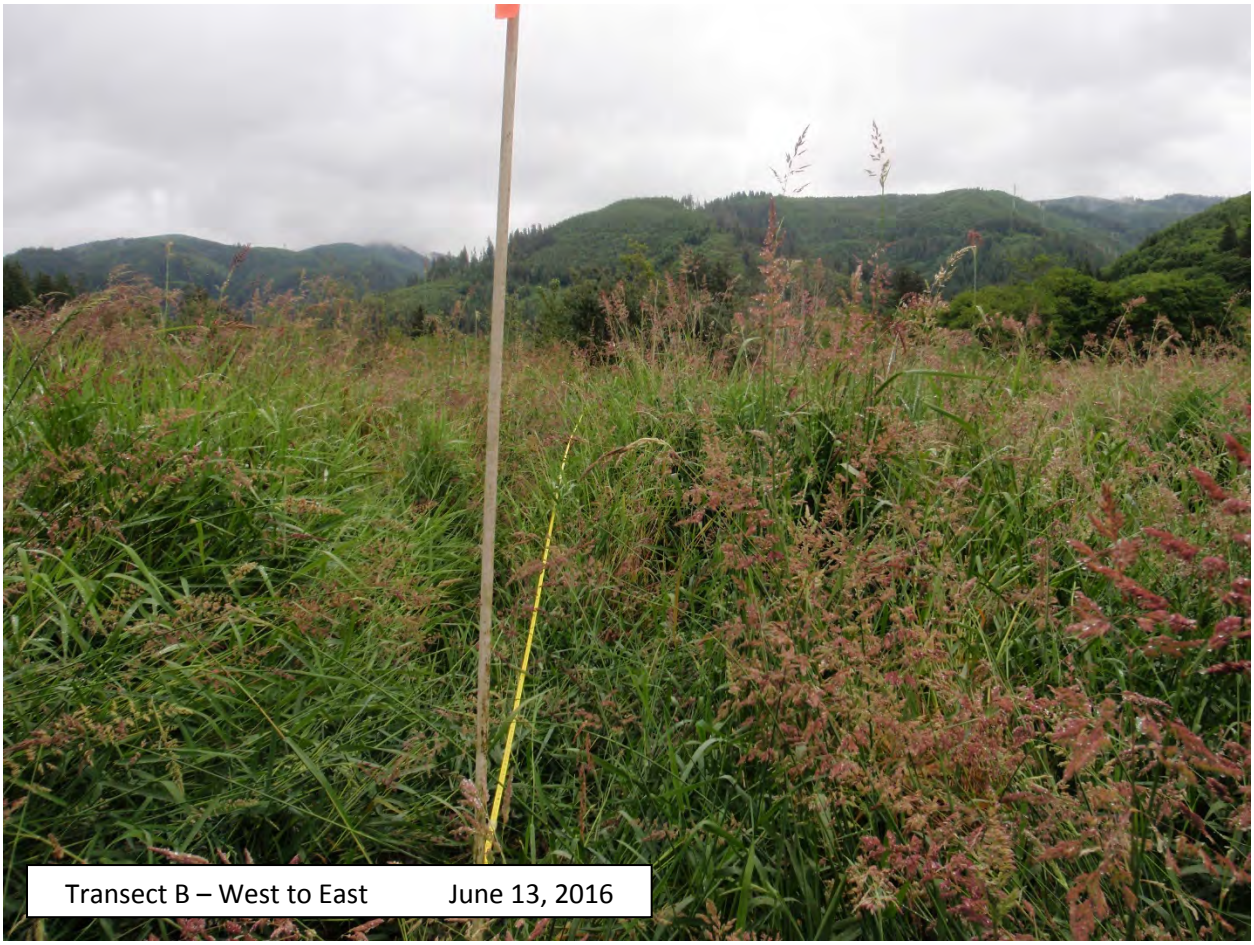
Transect A – West to East June 15, 2010

Transect A – East to West June 13, 2016

Transect A – West to East June 13, 2016

Transect B – East to West June 15, 2010

Transect B – East to West June 13, 2016



Transect B – West to East June 13, 2016

Transect B – West to East June 15, 2010

Transect C – West to East June 15, 2010

Transect C – East to West June 15, 2010

Transect C – East to West June 13, 2016

Transect C – West to East June 13, 2016

Transect D – West to East June 15, 2010

Transect D – East to West June 14, 2016

Transect D – West to East June 14, 2016

Transect D – East to West June 15, 2010

Transect E – West to East June 16, 2010

Transect E – East to West June 14, 2016

Transect E – West to East June 14, 2016

Transect F – West to East June 16, 2010

Transect G – North to South June 14, 2010

Transect F – East to West June 14, 2016

Transect F – West to East June 14, 2016

Transect G – South to North June 14, 2010

Transect G – South to North June 15, 2016

Transect G – North to South June 15, 2016

Transect H – North to South June 14, 2010

Transect H – South to North June 14, 2010

Transect H – South to North June 15, 2016

Transect H – North to South June 15, 2016

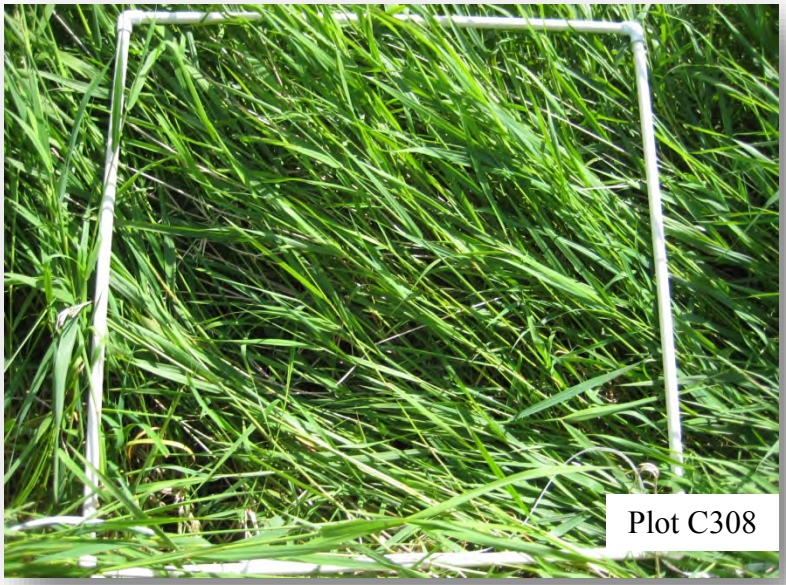
Transect I – North to South June 14, 2010

Transect I – South to North June 14, 2010

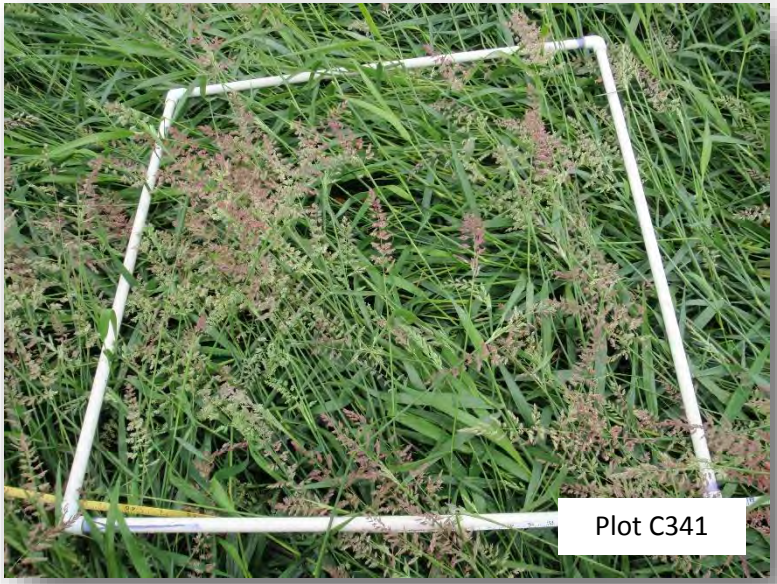
Transect I – South to North June 15, 2016

Appendix K

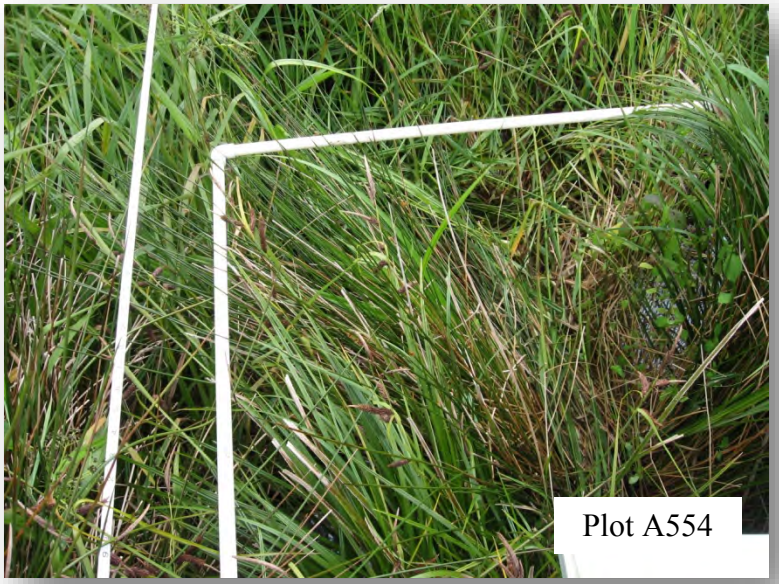
Representative photos of vegetation communities at Miami Wetlands



Close-up and overview photos of PEM1 Vegetation Community during June 2010



Close-up and overview photos of PEM1 vegetation community during June 2016



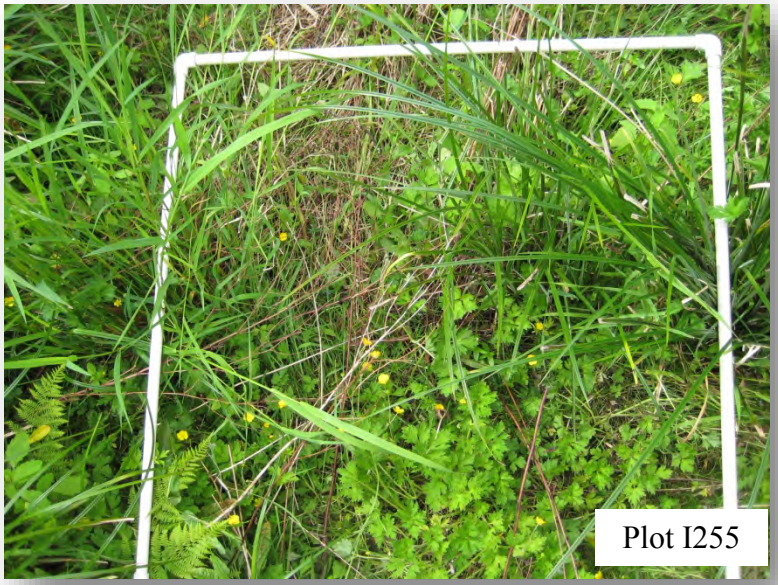
Close-up and overview photos of PEM2 Vegetation Community during June 2010

Close-up and overview photos of PEM2 vegetation community during June 2016

Close-up and overview photos of PEM3 Vegetation Community during June 2010

Close-up and overview photos of PEM3 vegetation community during June 2016

Close-up and overview photos of PEM4 Vegetation Community During June 2010



Close-up and overview photos of PSS Vegetation Community during June 2010

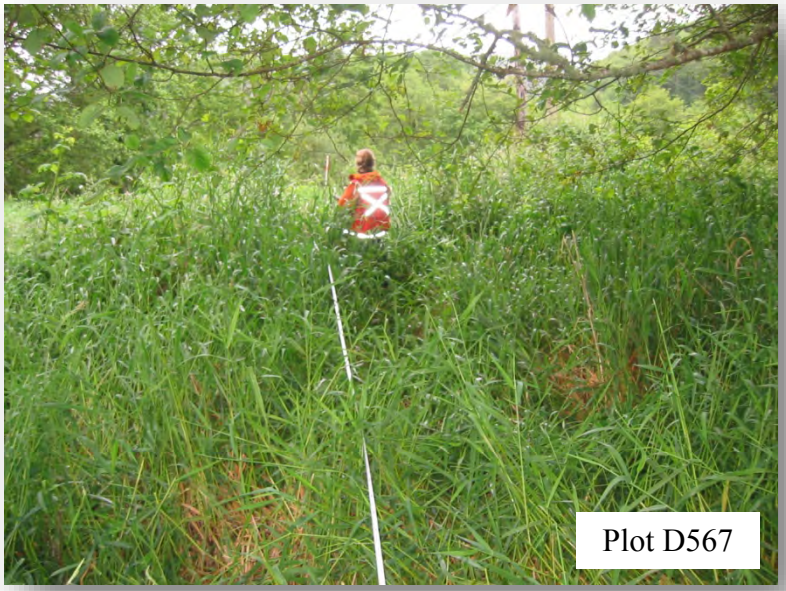

West End Transect A


Plot C568


Plot D364


Plot I150

Close-up and overview photos of PSS vegetation community during June 2016



Close-up and overview photos of Riparian 1 Vegetation Community during June 2010

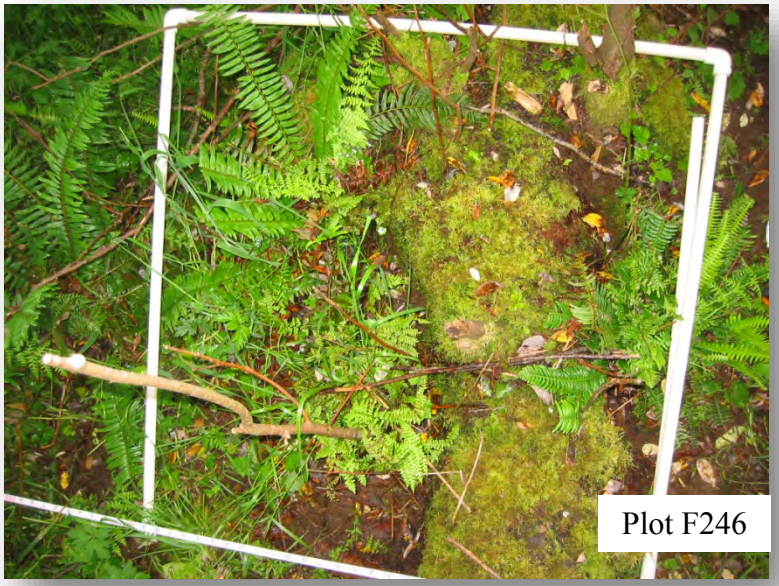
Plot A640

East End Transect A

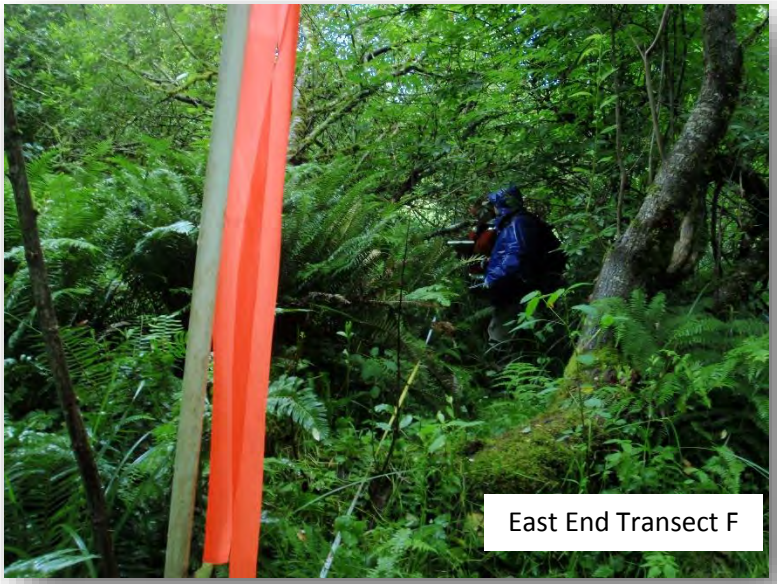
East End Transect D

East End Transect E

Close-up and overview photos of Riparian 1 vegetation community during June 2016



Close-up and overview photos of Riparian 2 Vegetation Community during June 2010



East End Transect F

Plot F281

Plot I378

Close-up and overview photos of Riparian 2 vegetation community during June 2016

Appendix L

Plant species known to occur at Miami Wetlands

Four Letter Code	Latin Name	Common Name	Wetland Indicator Status
ACCI	*Acer circinatum*	Vine maple	FAC
ACMA	*Acer macrophyllum*	Bigleaf maple	FACU
AGCA	*Agrostis capillaris*	Colonial bentgrass	FAC
ALRU	*Alnus rubra*	Red alder	FAC
ALPR	*Aloperurus pratensis*	Meadow foxtail	FACW
ANOD	*Anthoxanthum odoratum*	Sweet vernal grass	FACU
AREG	*Argentina egedii*	Pacific silverweed	OBL
ATFI	*Athyrium filix-femina*	Lady fern	FAC
BLSP	*Blechnum spicant*	Deer fern	FAC
CAsp	*Callitriche* sp.	Water-starwort	OBL
CADEW	*Carex deweyana*	Dewey's sedge	FACU
CAOB	*Carex obnupta*	Slough sedge	OBL
CAST	*Carex stipata*	Saw-beak sedge	OBL
CIAR	*Cirsium arvense*	Canada thistle	FACU
CLSI	*Claytonia sibirica*	Siberian spring beauty	FAC
COAR	*Convulvulus arvensis*	Field bindweed	UPL
COFO	*Digitalis purpurea*	Common foxglove	FACU
COSE1	*Convulvulus sepium*	Hedge bindweed	UPL
COSE2	*Cornus sericea*	Red osier dogwood	FACW
CRDO	*Craetaegus douglasii*	Douglas hawthorn	FAC
DAGL	*Dactylis glomerata*	Orchardgrass	FACU
DECE	*Deschampsia cespitosa*	Tufted hairgrass	FACW
ELAC	*Eleocharis acicularis*	Needle spikerush	OBL
ELOB	*Eleocharis obtusa*	Blunt spikerush	OBL
ELOV	*Eleocharis ovata*	Ovoid spikerush	OBL
ELPA	*Eleocharis palustris*	Common spikerush	OBL
EPCI	*Epilobium ciliatum (watsonii)*	Watson willowherb	FACW
EQAR	*Equisetum arvense*	Common horsetail	FAC
FEAR	*Festuca arundinacea*	Tall fescue	FAC
FRPU	*Frangula purshiana*	Cascara	FAC
GAsp	*Gallium* sp.	Bedstraw	
GEMA	*Geum macrophyllum*	Oregon avens	FACW
GLBO	*Glyceria borealis*	Northern mannagrass	OBL
HEHE	*Hedera helix*	English ivy	
HELA	*Heracleum lanatum*	Cow parsnip	FAC
HOBR	*Hordeum brachyantherum*	Meadow barley	FACW
HOLA	*Holcus lanatus*	Velvetgrass	FAC
IMCA	*Impatiens capensis*	Spotted touch-me-not	FACW
IMNO	*Impatiens noli-tangere*	Yellow touch me not	FACW
IRPS	*Iris pseudoacorus*	Yellow flag iris	OBL
JUAC	*Juncus acuminatus*	Tapertip rush	OBL
JUAR	*Juncus arcticus*	Arctic rush	FACW
JUBA	*Juncus balticus*	Baltic rush	FACW
JUBO	*Juncus bolanderi*	Bolander’s rush	OBL

Four Letter Code	Latin Name	Common Name	Wetland Indicator Status
JUEF	*Juncus effuses*	Soft rush	FACW
JUEN	Juncus ensifolius	Swordleaf rush	FACW
JUPA	*Juncus patens*	Grooved rush	FACW
LOIN	*Lonicera involucrata*	Black twinberry	FAC
LOCO	*Lotus corniculatus*	Birdsfoot trefoil	FAC
LOUL	*Lotus ulignosus*	Large birdsfoot trefoil	FAC
LYAM	*Lysichiton americanum*	Skunk-cabbage	OBL
MAFU	*Malus fusca*	Crabapple	FACW
OXOR	*Oxalis oregano*	Redwood sorrel	FACU
PHAR	*Phalaris arundinacea*	Reed canary grass	FACW
PHCA	*Physocarpus capitatus*	Pacific ninebark	FACW
PISI	*Picea sitchensis*	Sitka spruce	FAC
PLMA	*Plantago major*	Common plantain	FACU
POPA	*Poa palustris*	Fowl bluegrass	FAC
POPR	*Poa pratensis*	Kentucky bluegrass	FAC
POTR	*Poa trivialis*	Rough bluegrass	FACW
POCU	*Polygonum cuspidatum*	Japanese knotweed	FACU
POMU	*Polystichum munitum*	Western sword fern	FACU
POTR	*Populus trichocarpa [balsamifera]*	Black cottonwood	FAC
PSME	*Pseudotsuga menziesii*	Douglas fir	FACU
PTAQ	*Pteridium aquilinum*	Bracken fern	FACU
RAOC	*Ranunculus occidentalis*	Common buttercup	FAC
RARE	*Ranunculus repens*	Creeping buttercup	FACW
RISA	*Ribes sanguineum*	Red-flowering currant	FACU
RUAR	*Rubus armenicus*	Armenian blackberry	FACU
RULA	*Rubus lacinatus*	Cut-leaf blackberry	FACU
RUPA	*Rubus parviflorus*	Thimbleberry	FAC
RUSP	*Rubus spectabilis*	Salmonberry	FAC
RUUR	*Rubus ursinus*	Trailing blackberry	FAC
RUAC	*Rumex acetosella*	Sheep sorrel	FACU
RUCR	*Rumex crispus*	Curly dock	FAC
RUOB	*Rumex obtusifolius*	Broadleaved dock	FAC
SAHO	*Salix hookeriana*	Hooker's willow	FACW
SALU	*Salix lucida ssp lasiandra*	Pacific willow	FACW
SAPI	*Salix piperi*	Scouler willow	FACW
SASI	*Salix sitchensis*	Sitka willow	FACW
SARA	*Sambucus racemosa*	Red elderberry	FACU
SCMI	*Scirpus microcarpus*	Small-fruited bulrush	OBL
SPDO	*Spirea douglasii*	Douglas spirea	FACW
SPEM	*Sparganium emersum*	Narrowleaf burreed	OBL
STCO	*Stachys chamissonis var. cooleyae*	Coast hedge nettle	FACW
TOME	*Tolmeia menziesii*	Piggy-back plant	FAC
TYLA	*Typha latifolia*	Cattail	OBL

Four Letter Code	Latin Name	Common Name	Wetland Indicator Status
URDI	*Urtica dioica*	Stinging nettle	FAC
VAAM	*Vallisneria americana*	Tapegrass	OBL
VIAM	*Vicia americana*	American vetch	FAC
VIGI	*Vicia gigantea*	Giant vetch	FAC

OBL	Obligate Wetland	Almost always occurs (estimated probability 99%) under natural conditions in wetlands.
FACW	Facultative Wetland	Usually occurs in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
FAC	Facultative	Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
FACU	Facultative Upland	Usually occurs in non-wetlands (estimated probability 67%-99%), but occasionally found on wetlands (estimated probability 1%-33%).

Appendix M

Vertebrate species observed at Miami Wetlands (excluding fishes)

Latin Name	Common Name
REPTILES and AMPHIBIANS	
Ambystoma gracile	Northwestern salamander
Taricha granulose	Rough-skinned newt
Hyla regilla	Pacific treefrog
Rana aurora ssp. *aurora*	Northern red-legged frog
Thamnophis ordinoides	Northwestern garter snake
Thamnophis sirtalis ssp. *concinnus*	Red-spotted garter snake
Elgaria coerulea	Northern alligator lizard
BIRDS	
Phalacrocorax auritus	Double-crested cormorant
Ardea herodias	Great blue heron
Cathartes aura	Turkey vulture
Buteo jamaicensis	Red-tailed hawk
Haliaeetus leucocephalus	Bald eagle
Pandion haliaetus	Osprey
Porzana carolina	Sora
Rallus limicola	Virginia rail
Charadrius vociferous	Killdeer
Actitis macularia	Spotted sandpiper
Tyto alba	Barn owl
Bubo virginiana	Great horned owl
Ceryle alcyon	Belted kingfisher
Colaptes auratus	Northern flicker
Contopus sordidulus	Western wood-pewee
Empidonax difficilis	Pacific-slope flycatcher
Empidonax traillii	Willow flycatcher
Vireo gilvus	Warbling vireo
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Aphelocoma californica	Western scrub-jay
Tachycineta thalassina	Violet-green swallow
Poecile atricapillus	Black-capped chickadee
Cistothorus palustris	Marsh wren
Regulus calendula	Ruby-crowned kinglet
Catharus ustulatus	Swainson's thrush
Turdus migratorius	American robin
Bombycilla cedorum	Cedar waxwing
Vermivora celata	Orange-crowned warbler
Dendroica coronate	Yellow-rumped warbler
Dendroica petechia	Yellow warbler
Geothlypis trichas	Common yellowthroat
Pipilo maculates	Spotted towhee
Melospiza melodia	Song sparrow
Zonotrichia leucophrys	White-crowned sparrow

Latin Name	Common Name
BIRDS	
Zonotrichia atricapilla	Golden-crowned sparrow
Junco hyemalis	Dark-eyed junco
Pheucticus melanocephalus	Black-headed grosbeak
Agelaius phoeniceus	Red-winged blackbird
MAMMALS	
Canis latrans	Coyote
Odocoileus hemionus ssp. *columbianus*	Columbian black-tailed deer
Ursa americanus	American black bear
Procyon lotor	Northern raccoon
Thomomys mazama	Western pocket gopher
Castor canadensis	American beaver
Microtus townsendii	Townsend's vole
Ondatra zibethicus	Muskrat
Myocastor coypus	Nutria
Lontra Canadensis	North American river otter

Appendix N

Repeat perimeter photos 2010 and 2017


June 2010


April 2017


June 2010


April 2017


June 2010


April 2017

June 2010

April 2017


June 2010


April 2017


June 2010


April 2017

June 2010

April 2017

June 2010

April 2017

June 2010

April 2017

June 2010

April 2017


June 2010


April 2017

June 2010

April 2017

Appendix O

Repeat interior photos 2010-2017

Miami Wetlands Repeat Photographs - Additional Photos

North Lateral Ditch and Double Wood Structure on Hobson-Struby Channel

Pre-Construction - June 2010

During-Construction - August 2011

Post-Construction - Jan. 2013

Post-Construction - June 2013

North Lateral Ditch and Double Wood Structure (continued)

Post-Construction - Dec. 2013

Post-Construction—Sep. 2014

Post– Construction—March 2016

Post– Construction—May 2017

Hobson-Struby Confluence (looking upstream)

Immediate Post-Construction - Oct. 2010

Post-Construction - June 2011

Post-Construction - Jan. 2013

Post-Construction - June 2013

Hobson-Struby Confluence (continued)

Post-Construction - Dec. 2013

Post-Construction—Sep. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Miami Wetlands Repeat Photographs - Additional Photos

Hobson Cr. Wood Structure (looking upstream)

Post-Construction - June 2010

Post-Construction - Jan. 2013

Post Construction - June 2013

Post Construction - Dec. 2013

Hobson Cr. Wood Structure (continued)

Post-Construction—Sep. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Hobson-Struby Channel Plus Floodplain Wood Structure (looking upstream)

Post-Construction - Sep. 2010

Post-Construction - Jan. 2013

Post-Construction - June 2013

Post-Construction - Dec. 2013

Hobson-Struby Channel Plus Floodplain Wood Structure (continued)

Post-Construction - Sept. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Miami Wetlands Repeat Photographs - Additional Photos

Double Wood Structure on Hobson-Struby Channel (looking downstream)

Post-Construction - Sep. 2010

Post-Construction - Oct. 2010

Post-Construction - Jan. 2013

Post Construction - June 2013

Double Wood Structure on Hobson-Struby Channel (continued)

Post-Construction - Dec. 2013

Post-Construction—Sep. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Double Wood Structure on Hobson-Struby Channel (looking upstream)

During-Construction - Sep. 2010

Post-Construction - Oct. 2010

Post-Construction - Jan. 2013

Post-Construction - June 2013

Double Wood Structure on Hobson-Struby Channel (continued)

Post-Construction - Dec. 2013

Post-Construction—Sep. 2014

Post– Construction—Mar. 2016

Post– Construction—May 2017

Miami Wetlands Repeat Photographs - Additional Photos

Wood Structure on Lower Hobson-Struby Channel (looking upstream)

Post-Construction - Oct. 2010

Post-Construction - Jan. 2013

Post-Construction - June 2013

Post-Construction - Dec. 2013

Wood Structure on Lower Hobson-Struby Channel (continued)

Post-Construction—Sep. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Hobson-Struby Channel Confluence With Tidal Channel (looking downstream)

Post-Construction - Oct. 2010

Post-Construction - Jan. 2013

Post-Construction - June 2013

Post-Construction - Dec. 2013

Hobson-Struby Channel Confluence With Tidal Channel (continued)

Post-Construction—Sep. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Miami Wetlands Repeat Photographs - Additional Photos

Confluence of E and E2 Tidal Channels (looking upstream)

Post-Construction - Aug. 2010

Post-Construction - Jan. 2013

Post-Construction - June 2013

Post-Construction - Dec. 2013

Confluence of E and E2 Tidal Channels (continued)

Post-Construction—Sep. 2014

Post-Construction—Mar. 2016

Post-Construction—May 2017

Wood Structure at South End of the Old Hobson-Struby Ditch Fill

Post-Construction - April 2012

Post-Construction - Dec. 2013

Post-Construction - Sep. 2014

Post-Construction - Mar. 2016

Wood Structure at South End of the Old Hobson-Struby Ditch Fill (continued)

Post-Construction - May 2017

Miami Wetlands Repeat Photographs - Additional Photos

Beaver Dam constructed summer 2014 at confluence of channels C and F (paired images)

Post-Construction - Sep. 2014

Post-Construction - Sep. 2014

Post-Construction - Mar. 2016

Post-Construction - Mar. 2016

Beaver Dam constructed summer 2014 at confluence of channels C and F (continued)

Post-Construction - May 2017

Post-Construction - May 2017