

**Lyle Creek**  
**Post Closeout Contingency Update**  
**Full Delivery Site**

**DMS ID (IMS) # 94643**  
**Catawba County**  
**Stream & Wetland Mitigation Site**

The Lyle Creek closeout site visit was completed with the Interagency Review Team (IRT) on 6/20/2017. The IRT considered a total of 5,571 SMUs and 7.1 WMUs for closure during the site visit. The site was not approved for closure in June 2017, the following plan of action was approved:

1. Monitor wetland hydrology for one additional year (MY6-2017).
2. Monitor stream reaches UT1 (upstream reach) and UT1b (upstream reach) visually for one additional year.
3. Continue beaver management as necessary for one additional year.
4. Fixed plot vegetation height data to be submitted to the IRT (wetlands only).
5. Eliminate and replant minor landowner encroachments in a few locations.

**Resolution:**

1. All groundwater gages within the Site met the project success criteria (14 consecutive days, 7.0% of growing season) for Year 6. Please see attached summary gage table and plots for Year 6 results.
2. Stream reaches UT1 (upstream reach) and UT1B (upstream reach) were visually monitored during Year 6 between June and November 2017. Both reaches appear stable and are not showing signs of instability. Please refer to the attached Current Condition Plan View Map and site photographs.
3. Wildlands has continued to monitor the Lyle Creek Site for additional signs of beaver activity. At this time, beaver are not present within the lower reaches of UT1.
4. Fixed plot vegetation height data has shown a large improvement from the MY5 and MY6 assessments. The MY6 (2017) average wetland plot height is 7.8 ft compared to MY5, which was 6.04 ft. The planted vegetation is healthy and continuing to grow. It is anticipated that the average planted stem height will continue to improve and exceed the 8 ft height requirement in 2018. Please refer to the attached vegetation summary data for MY6.
5. Wildlands added additional posts and signs to demarcate the easement boundary (Please refer to attached photographs. Additional plants were installed in 2016 to replace stem loss from encroachment. In addition, herbaceous vegetation and natural recruitment have flourished in MY6. These landowner encroachments have been resolved and are no longer an area of concern.

**Recommendation:**

DMS recommends closing the Lyle Creek site with 5,571 SMUs and 7.1 WMUs.

### Wetland Gage Attainment Summary

Lyle Creek Mitigation Site

DMS Project No. 94643

Monitoring Year 6 - 2017

#### Wetlands RW1 and RW2

Summary of Groundwater Gage Results for Years 1 through 6						
Gage	Success Criteria Achieved/Max Consecutive Days During Growing Season (%)					
	Year 1 (2012)	Year 2 (2013)	Year 3 (2014)	Year 4 (2015)	Year 5 (2016)	Year 6 (2017)
1	No/5 Days (2.5%)	Yes/49 Days (24.0%)	Yes/47 Days (23.0%)	Yes/59 Days (25.4%)	Yes/42 Days (18.1%)	Yes/41 Days (20.3%)
2	No/0 Days (0.0%)	Yes/93 Days (46.0%)	Yes/113.5 Days (56.0%)	Yes/99.5 Days (42.9%)	Yes/108 Days (46.6%)	Yes/86 Days (42.6%)
3	Yes/29 Days (14.0%)	Yes/49 Days (24.0%)	Yes/52.5 Days (26.0%)	Yes/101.5 Days (43.8%)	Yes/84 Days (36.2%)	Yes/99 Days (49.0%)
4	Yes/27 Days (13.0%)	Yes/54.5 Days (27.0%)	Yes/47 Days (23.0%)	Yes/65.5 Days (28.2%)	Yes/48 Days (20.7%)	Yes/41 Days (20.3%)
5	No/11 Days (5.0%)	Yes/41.5 Days (20.3%)	Yes/52.5 Days (26.0%)	Yes/75.5 Days (32.5%)	Yes/233 Days (100.0%)	Yes/130 Days (64.4%)
6	No/5 Days (2.5%)	Yes/16 Days (7.8%)	No/10 Days (5.0%)	Yes/35.5 Days (15.3%)	No/9 Days (3.9%)	Yes/34 Days (16.8%)
7	Yes/22 Days (11.0%)	Yes/179 Days (88.0%)	Yes/49.5 Days (25.0%)	Yes/79.5 Days (34.3%)	Yes/43 Days (18.5%)	Yes/117 Days (57.9%)
8	No/12 Days (6.0%)	Yes/53 Days (26.0%)	Yes/44.5 Days (22.0%)	Yes/63 Days (27.2%)	Yes/42 Days (18.1%)	Yes/54 Days (26.7%)
9	N/A	N/A	N/A	Yes/17 Days (7.3%)	No/9 Days (3.9%)	Yes/34 Days (16.8%)
10	N/A	Yes/180 Days (88.0%)	Yes/45.5 Days (23.0%)	Yes/85 Days (36.6%)	Yes/45 Days (19.4%)	Yes/99 Days (49.0%)
11	N/A	Yes/80 Days (39.0%)	Yes/50.5 Days (25.0%)	Yes/73.5 Days (31.7%)	Yes/84 Days (36.2%)	Yes/74 Days (36.6%)
Reference	Yes/74.5 Days (36.5%)	Yes/204 Days (100%)	Yes/35 Days (17.3%)	Yes/52.5 Days (22.6%)	No/13 Days (5.4%)	No/13.5 Days (6.7%)

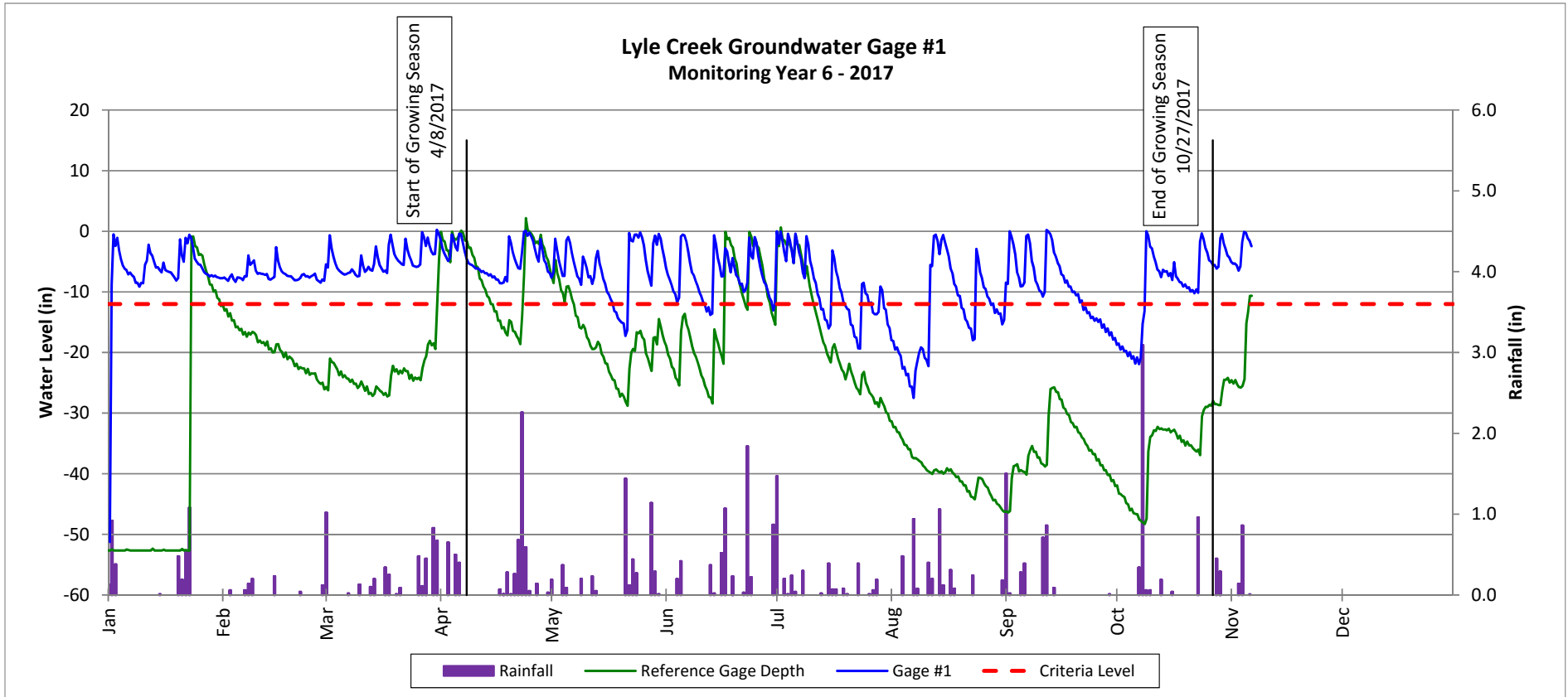
Wetland success criteria is 7% of growing season (14 consecutive days).

## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW1

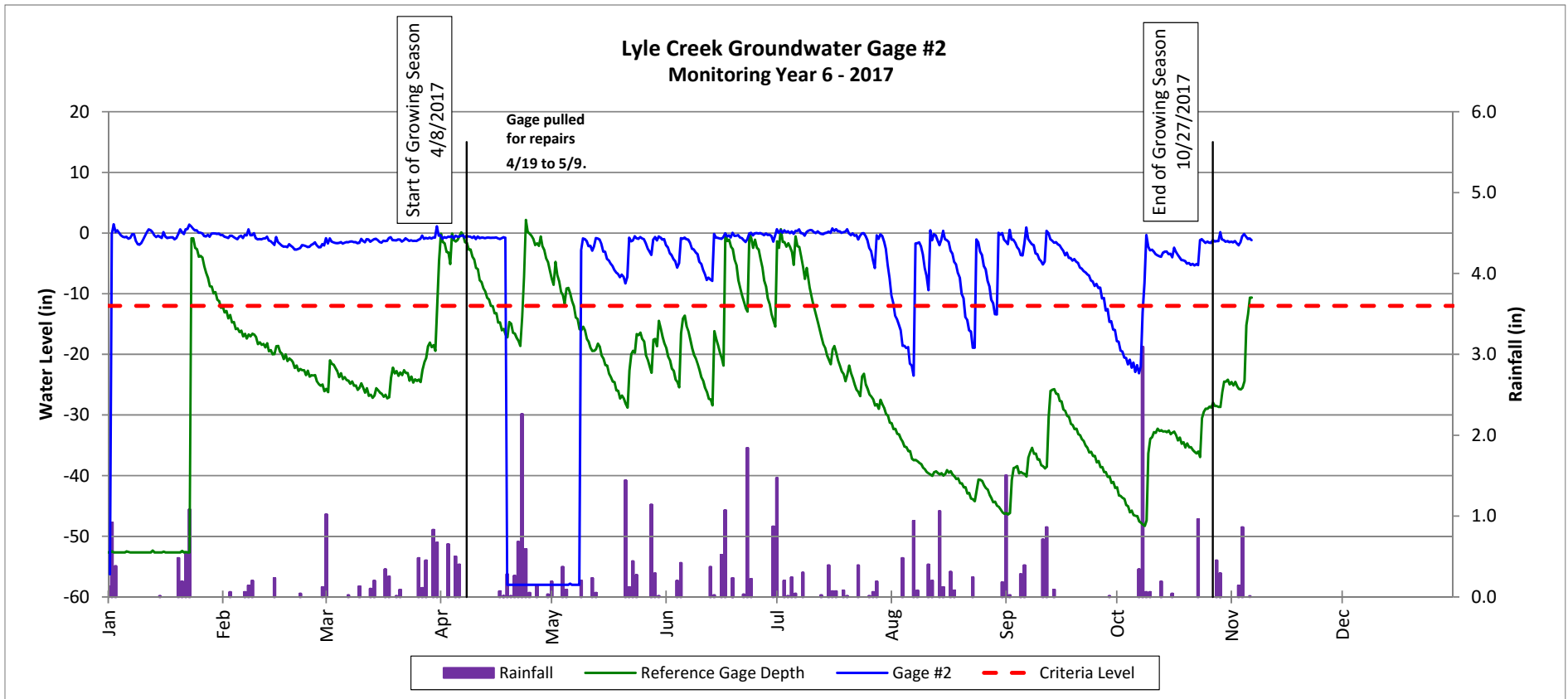


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Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW1



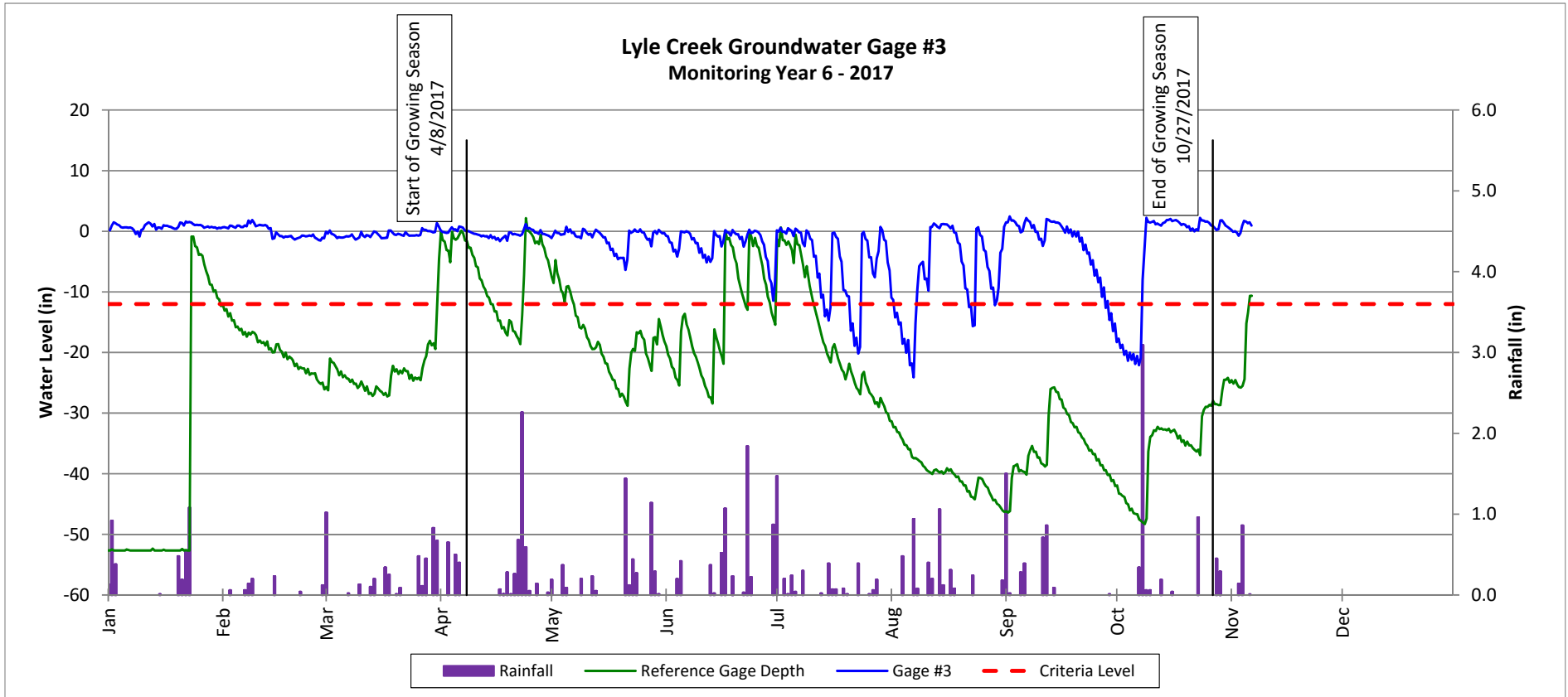


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Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW1

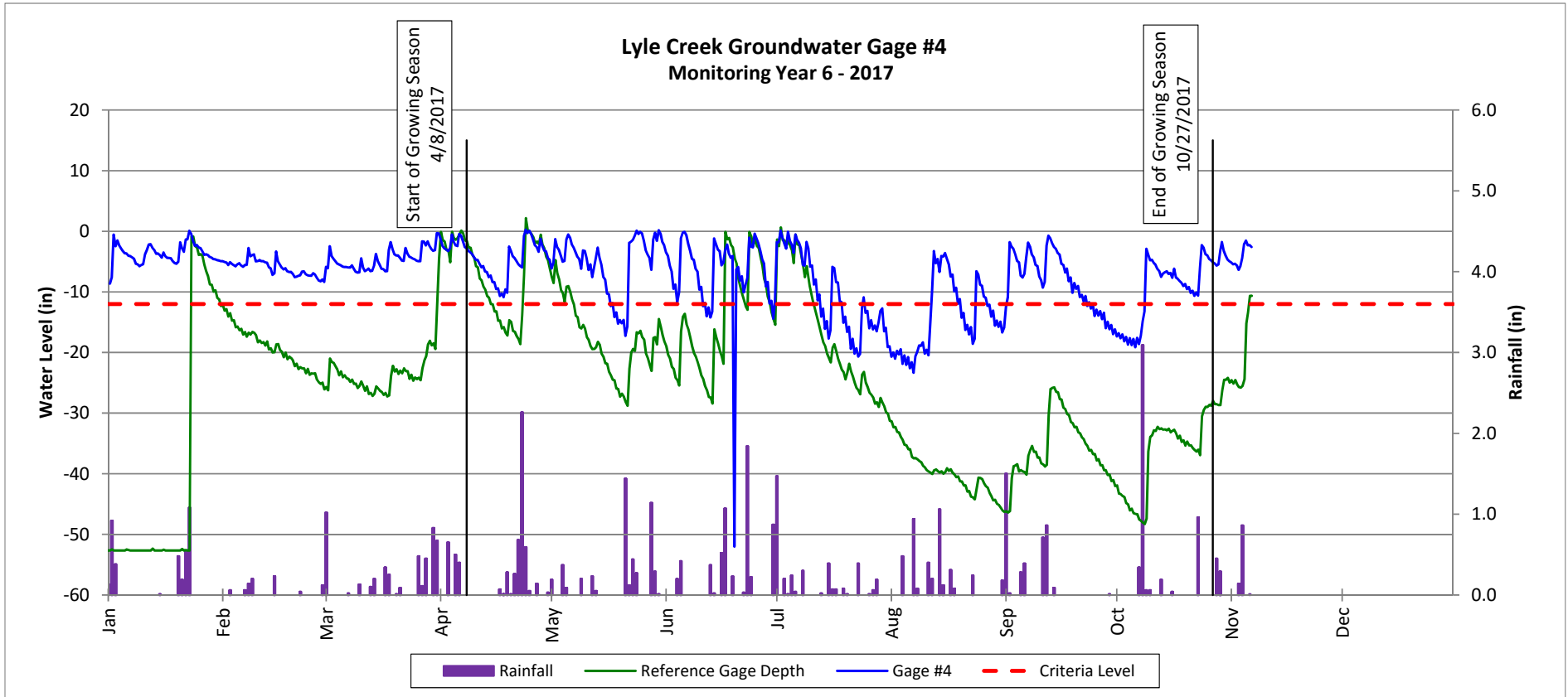


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW1

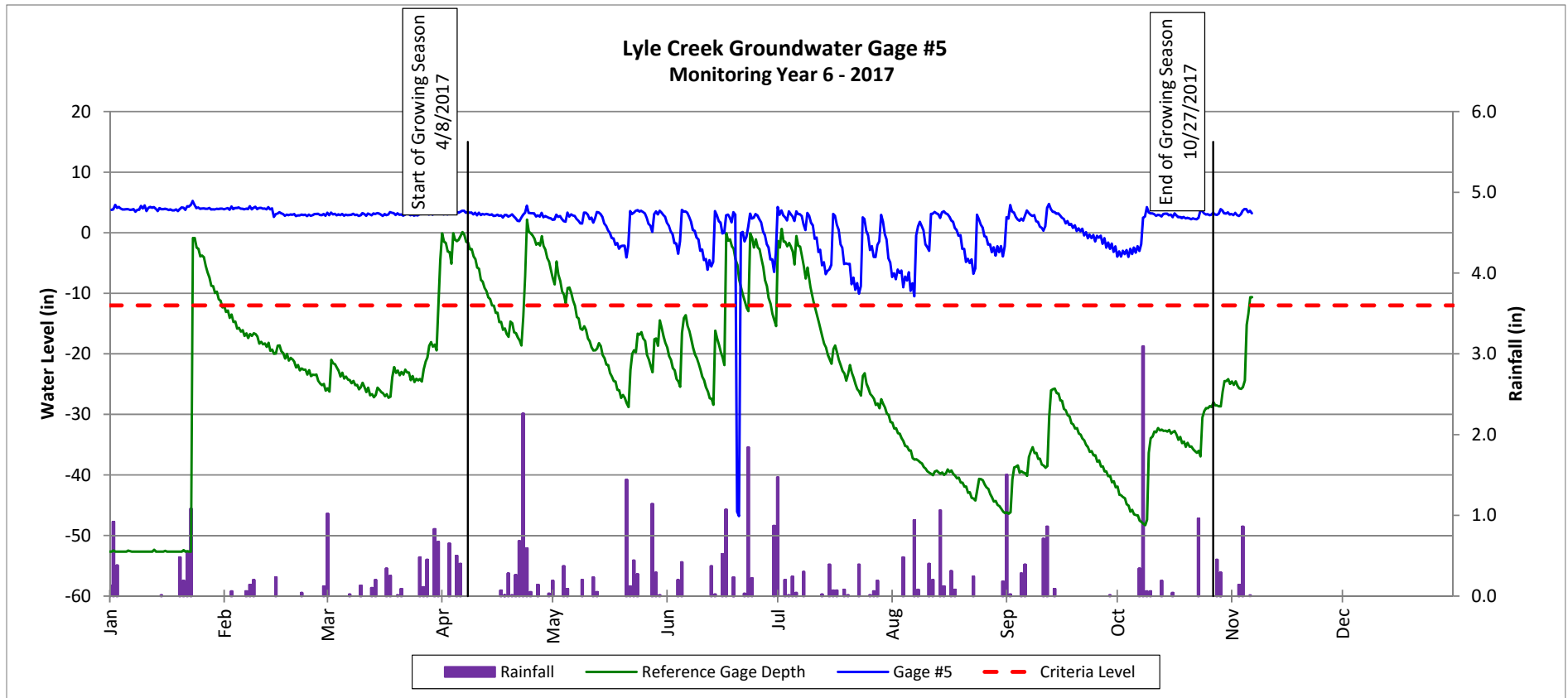


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW1

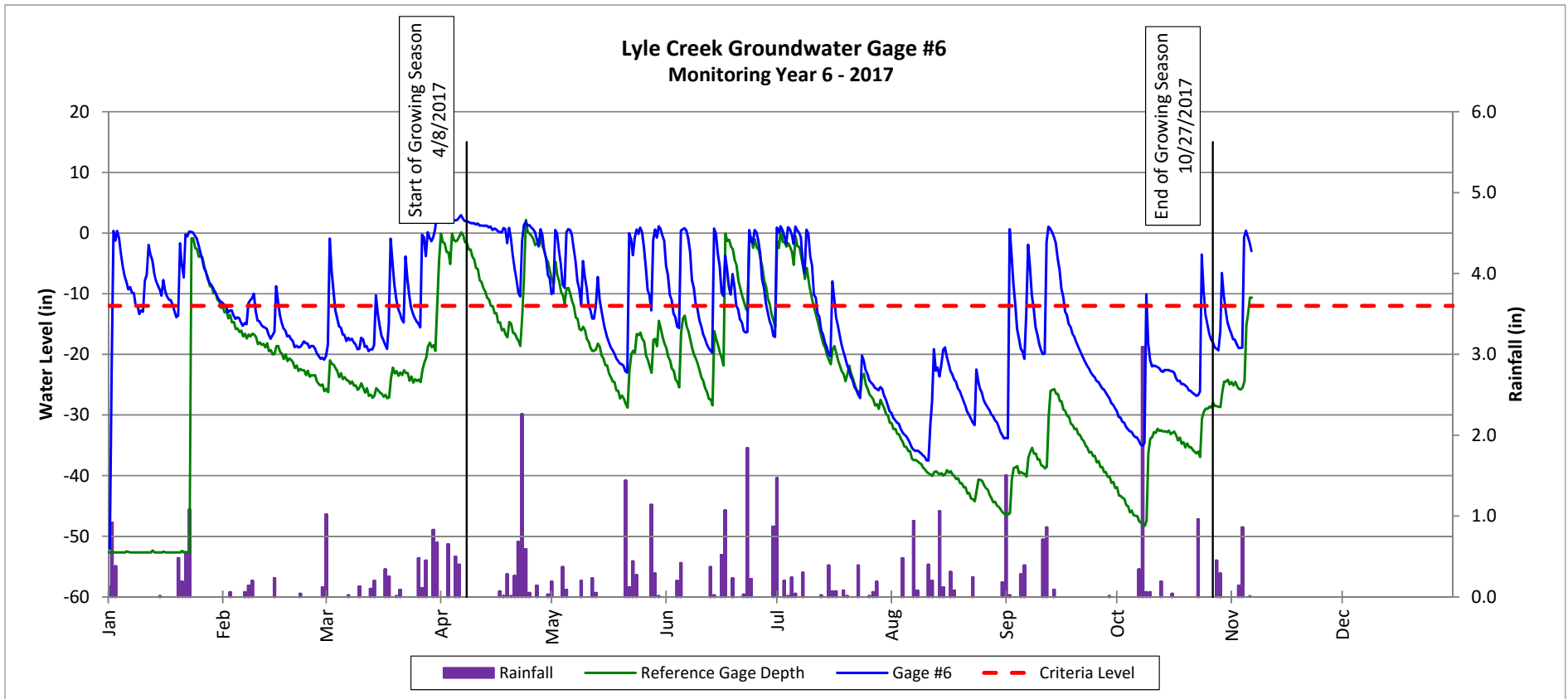


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

**Monitoring Year 6 - 2017**

Wetland RW2

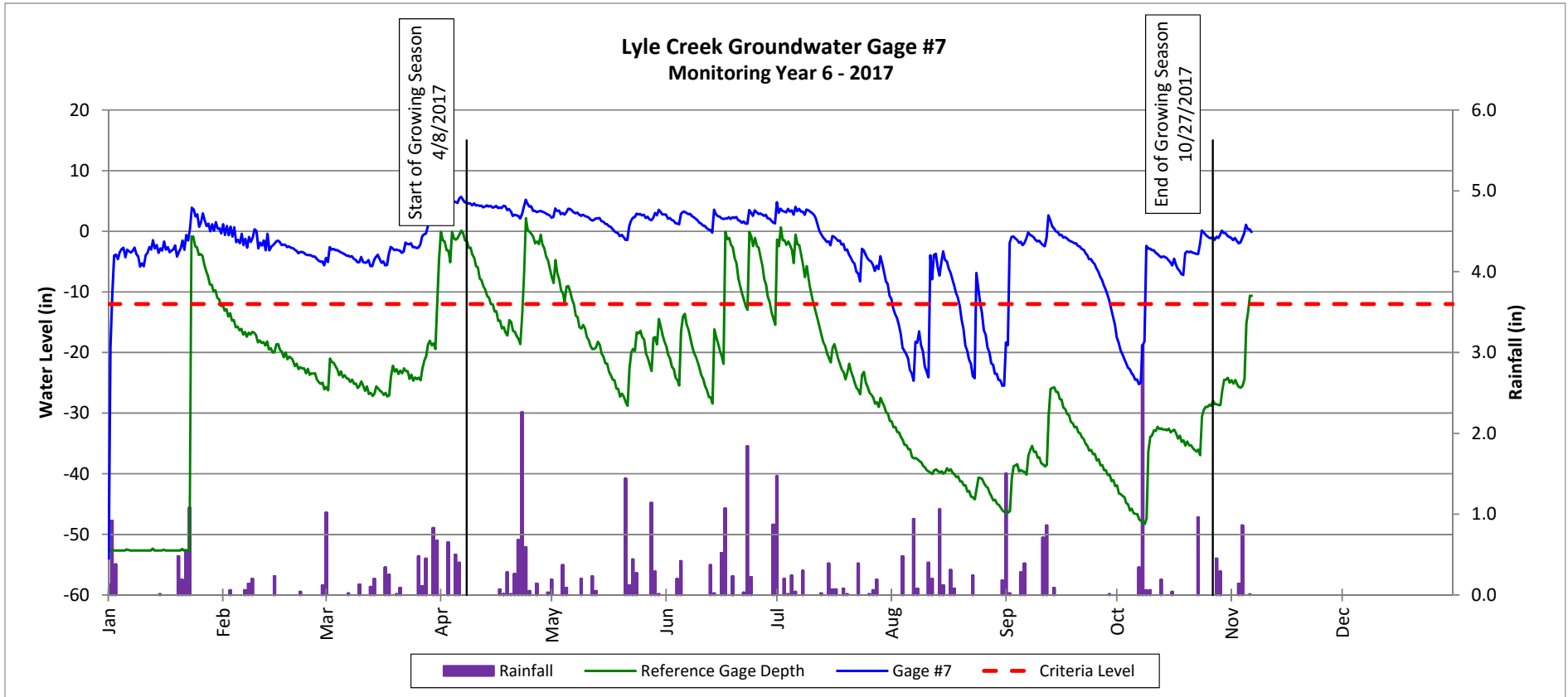


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW2

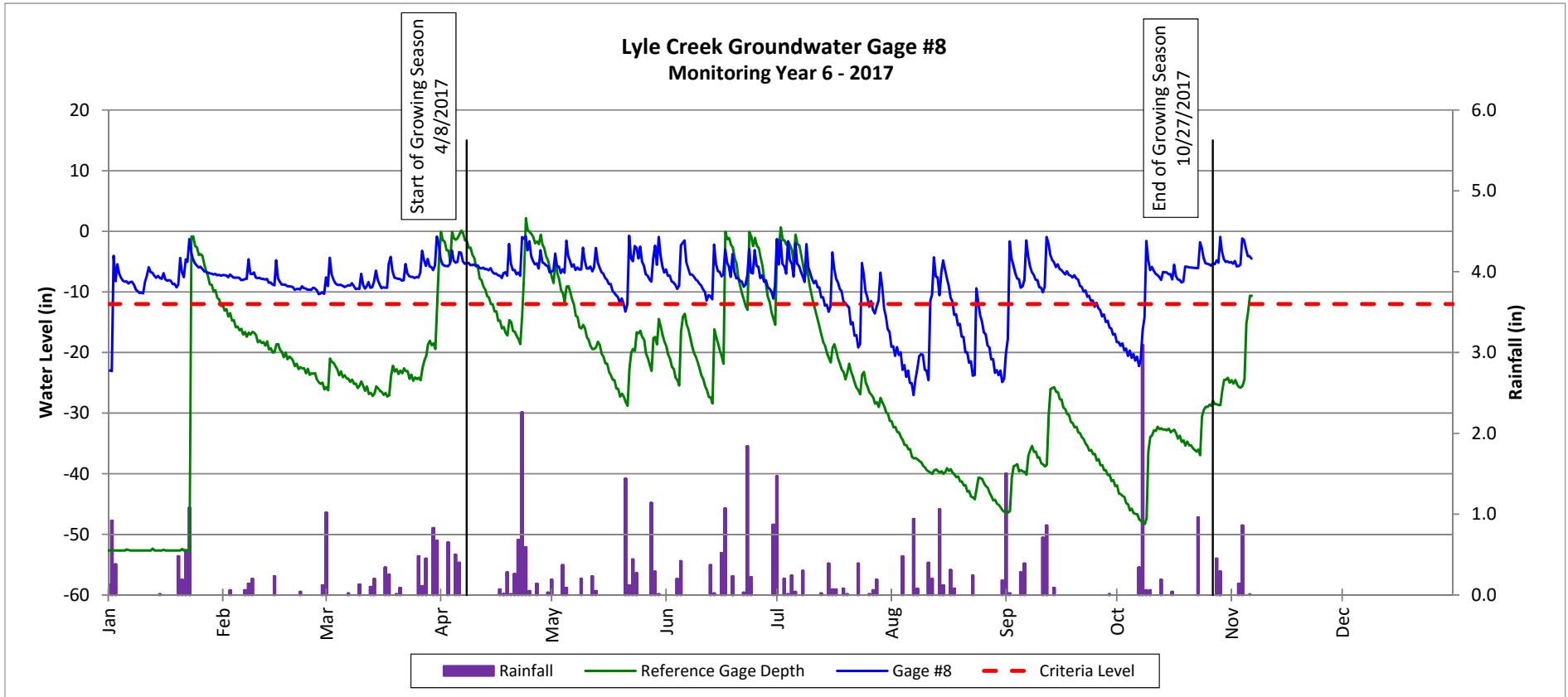


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

**Monitoring Year 6 - 2017**

Wetland RW2

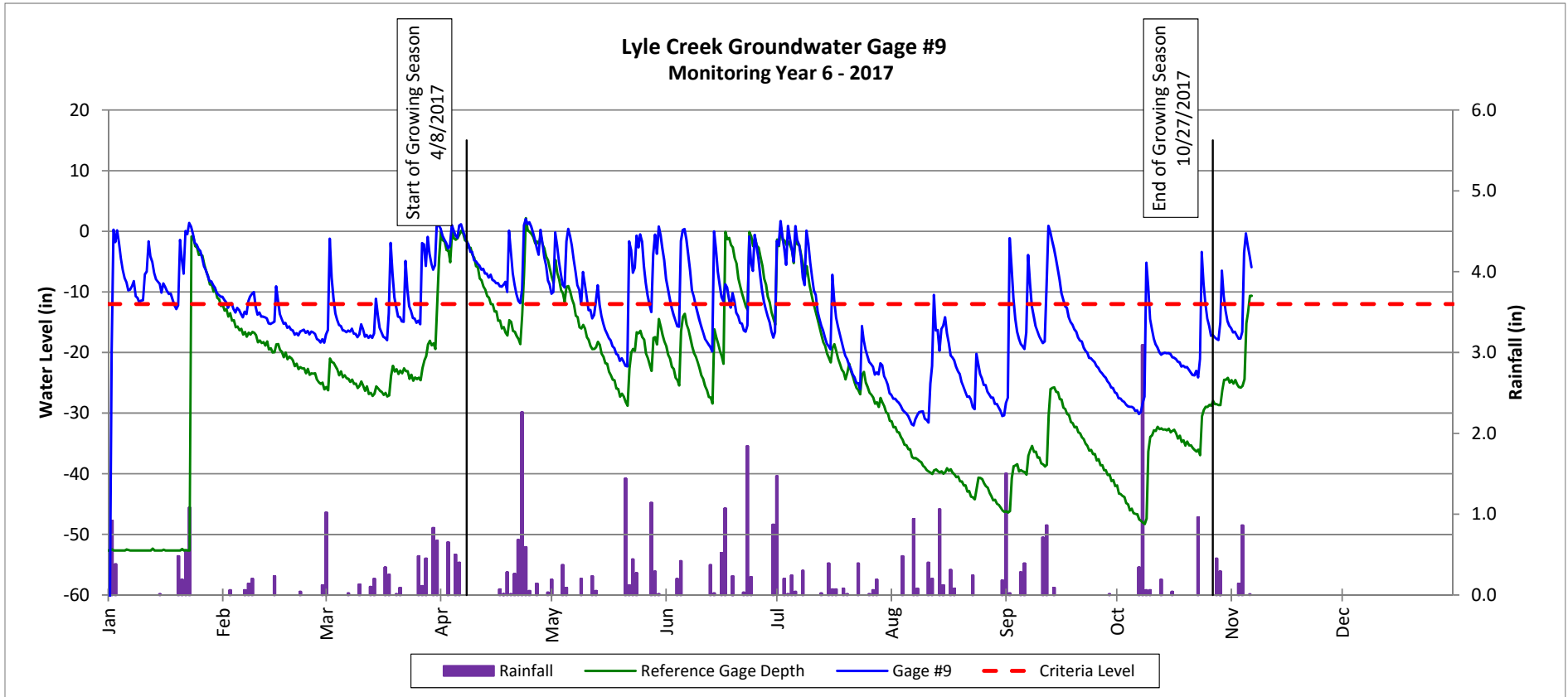


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW2

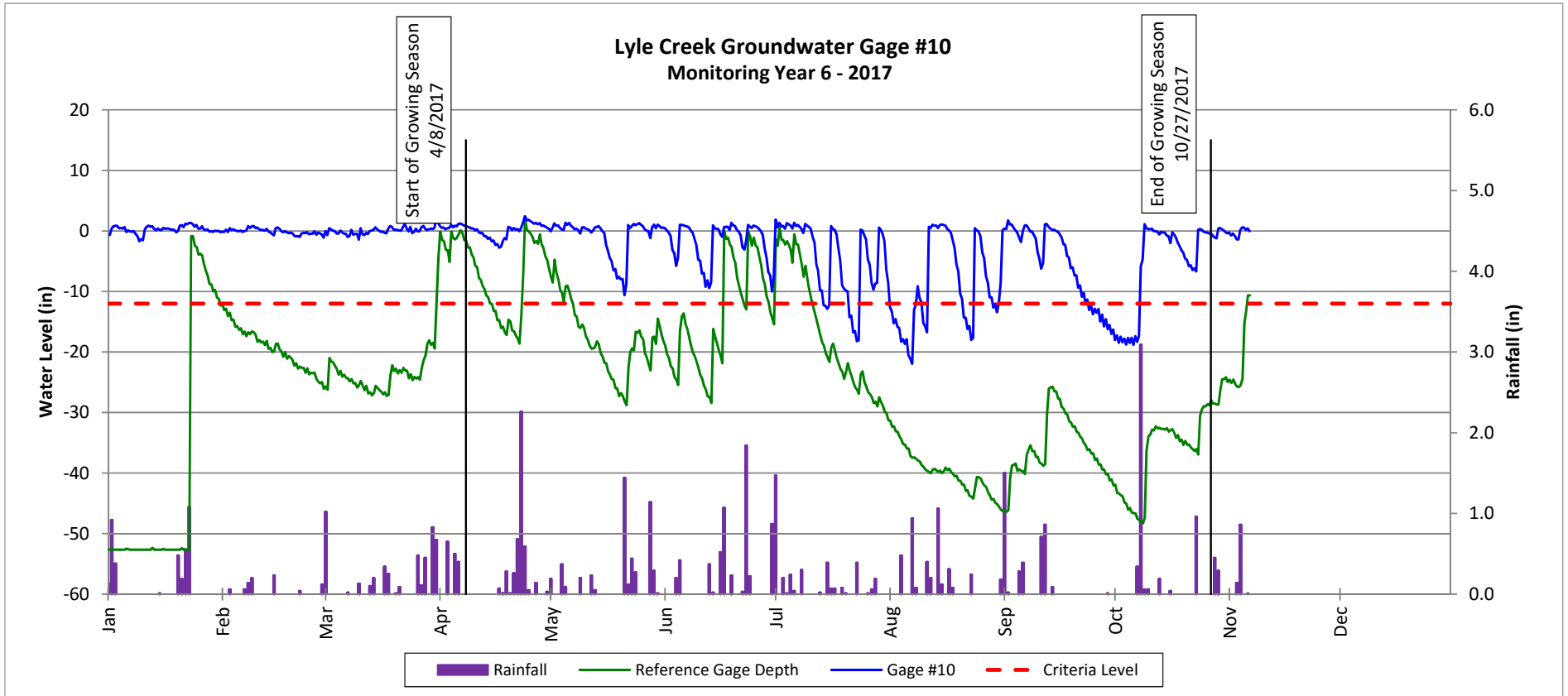


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW1



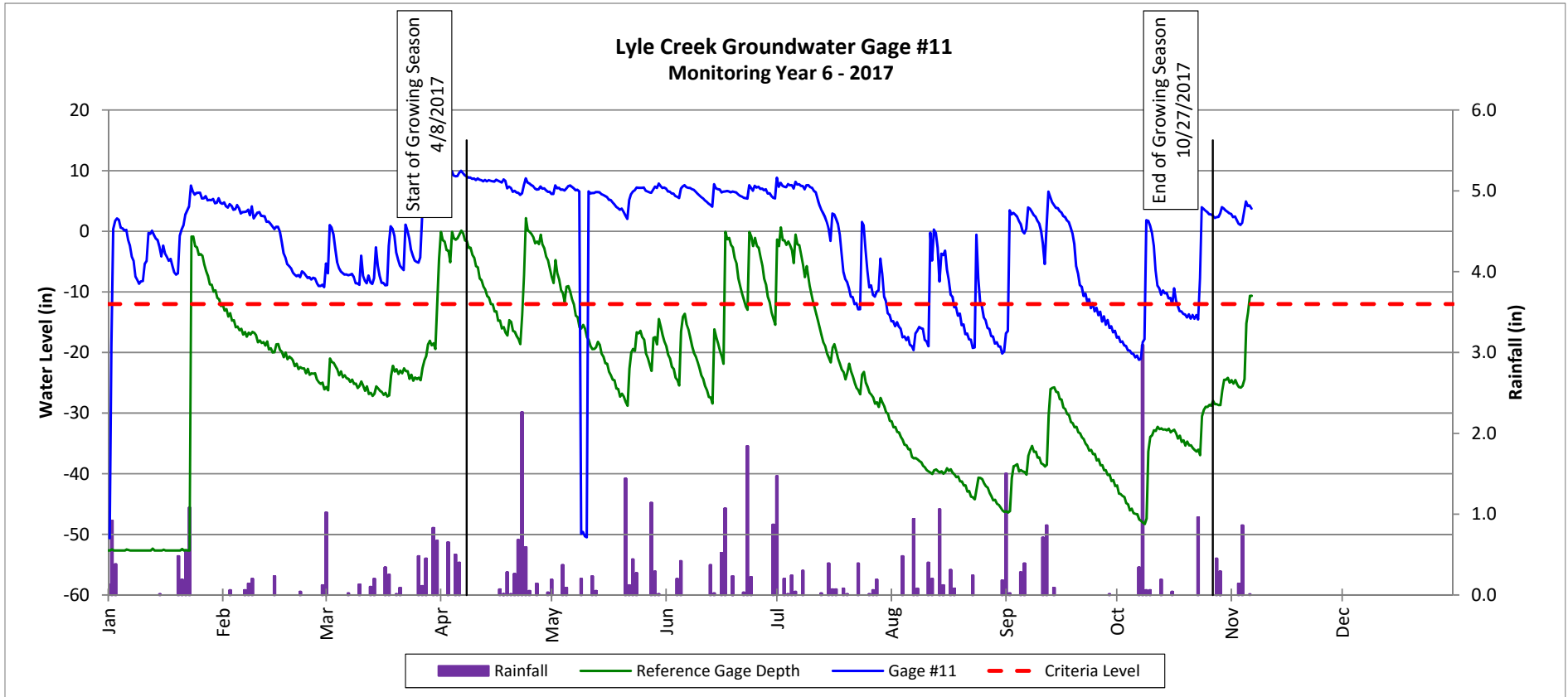


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland RW2

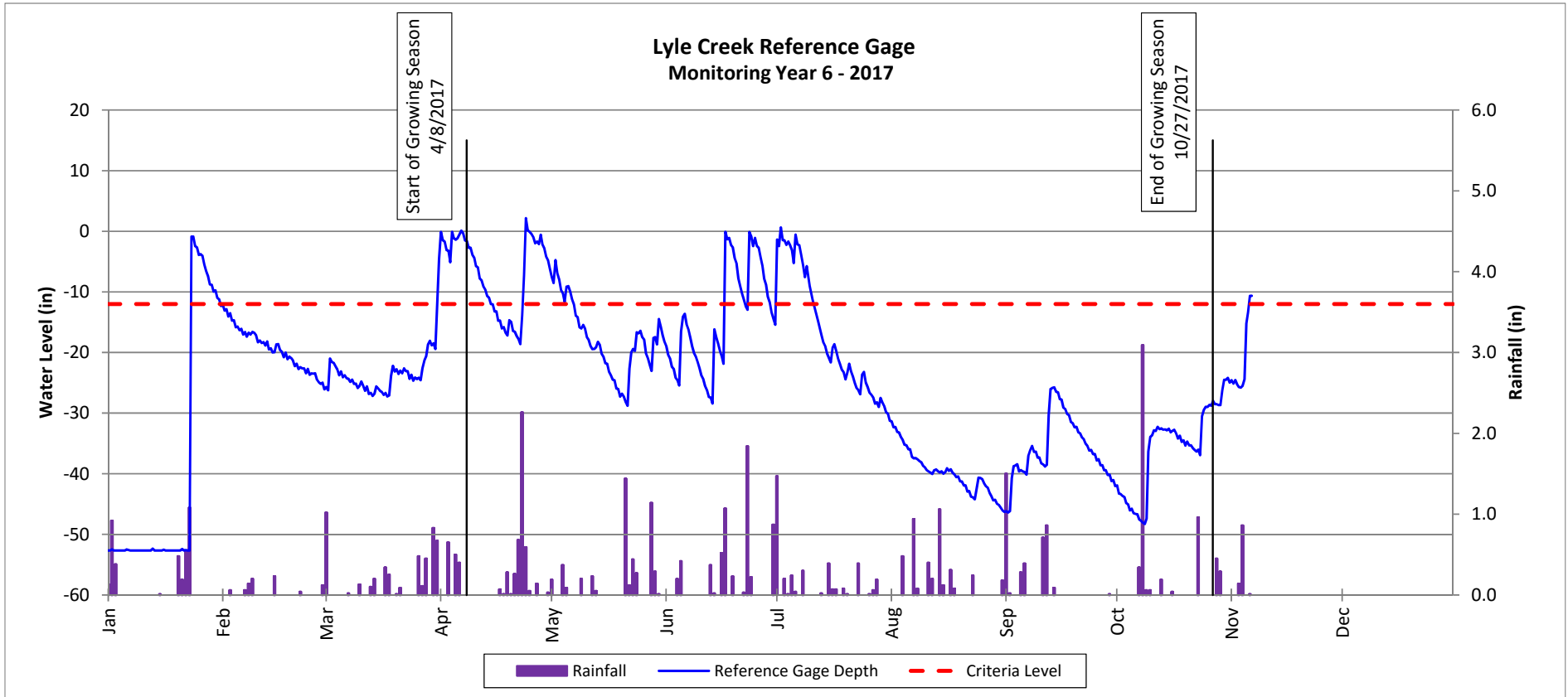


## Groundwater Gage Plots

Lyle Creek Mitigation Site (DMS Project No. 94643)

Monitoring Year 6 - 2017

Wetland Number

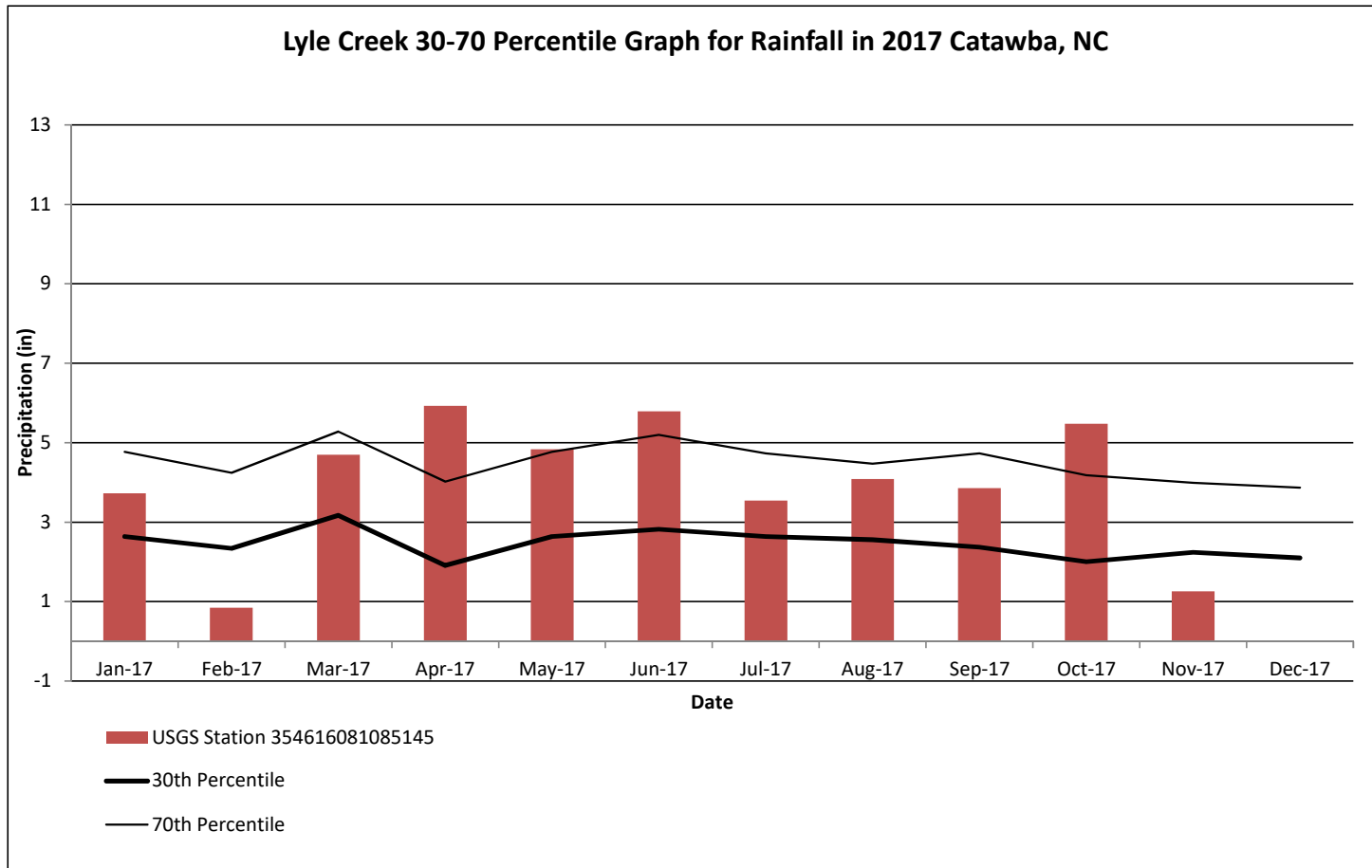


### Monthly Rainfall Data

Lyle Creek Mitigation Site

DMS Project No. 94643

Monitoring Year 6 - 2017



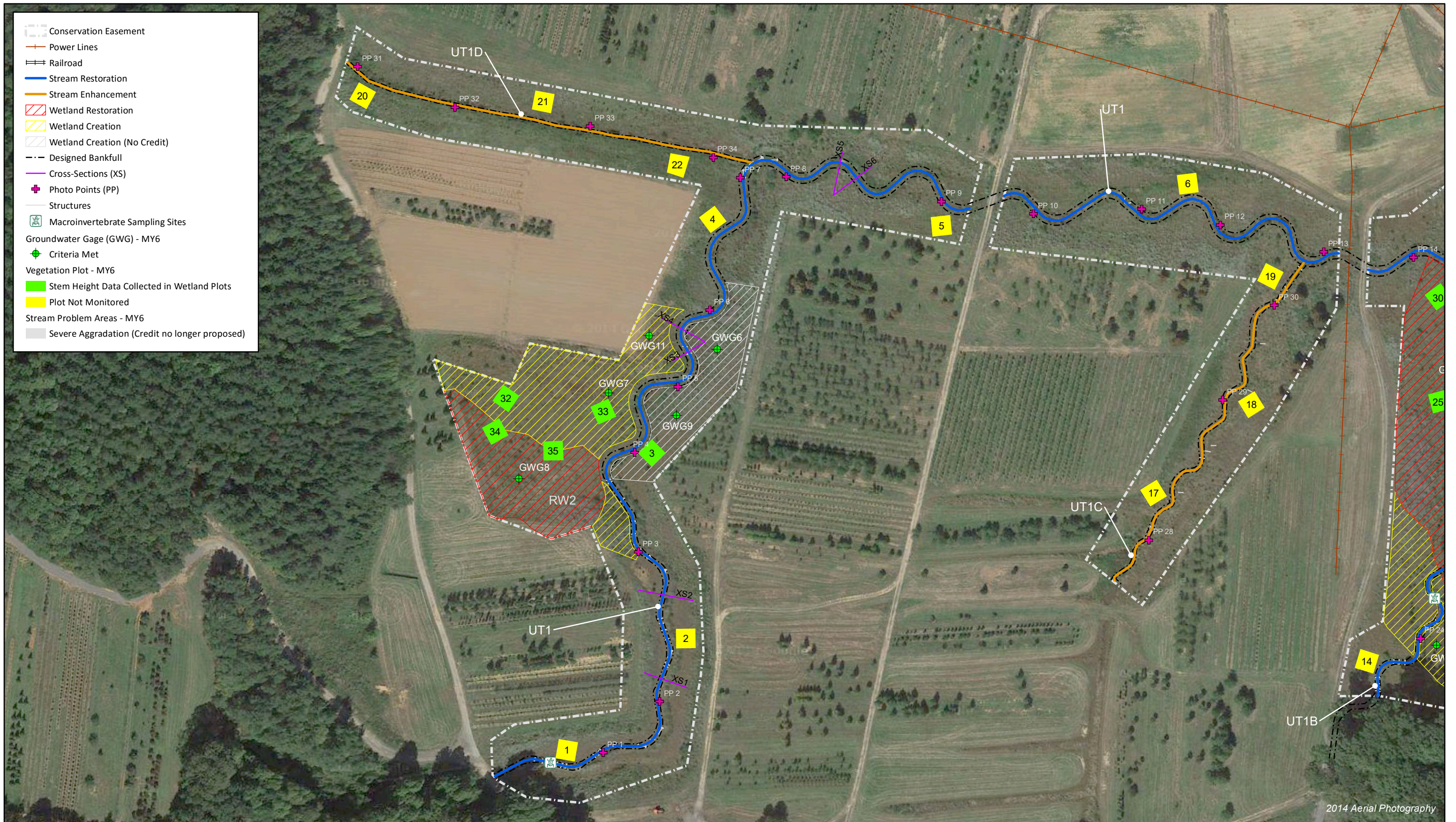
<sup>1</sup> 2017 rainfall collected by onsite rainfall gage and USGS station 354616081085145

<sup>2</sup> 30th and 70th percentile rainfall data collected from weather station Catawba 3 NNW, NC1579 (USDA, 2002)



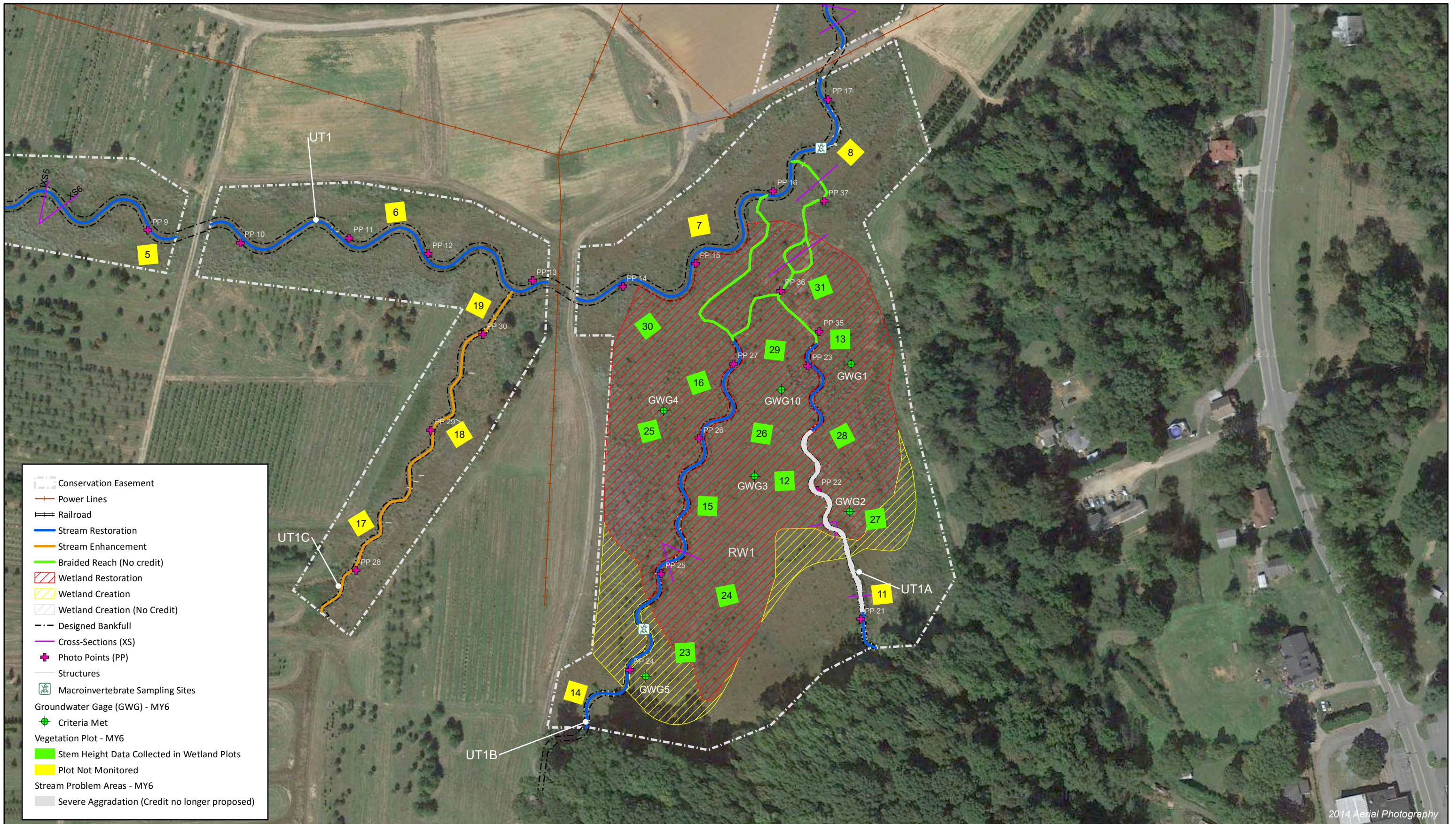






2014 Aerial Photography





2014 Aerial Photography

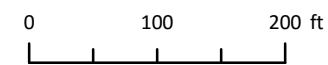
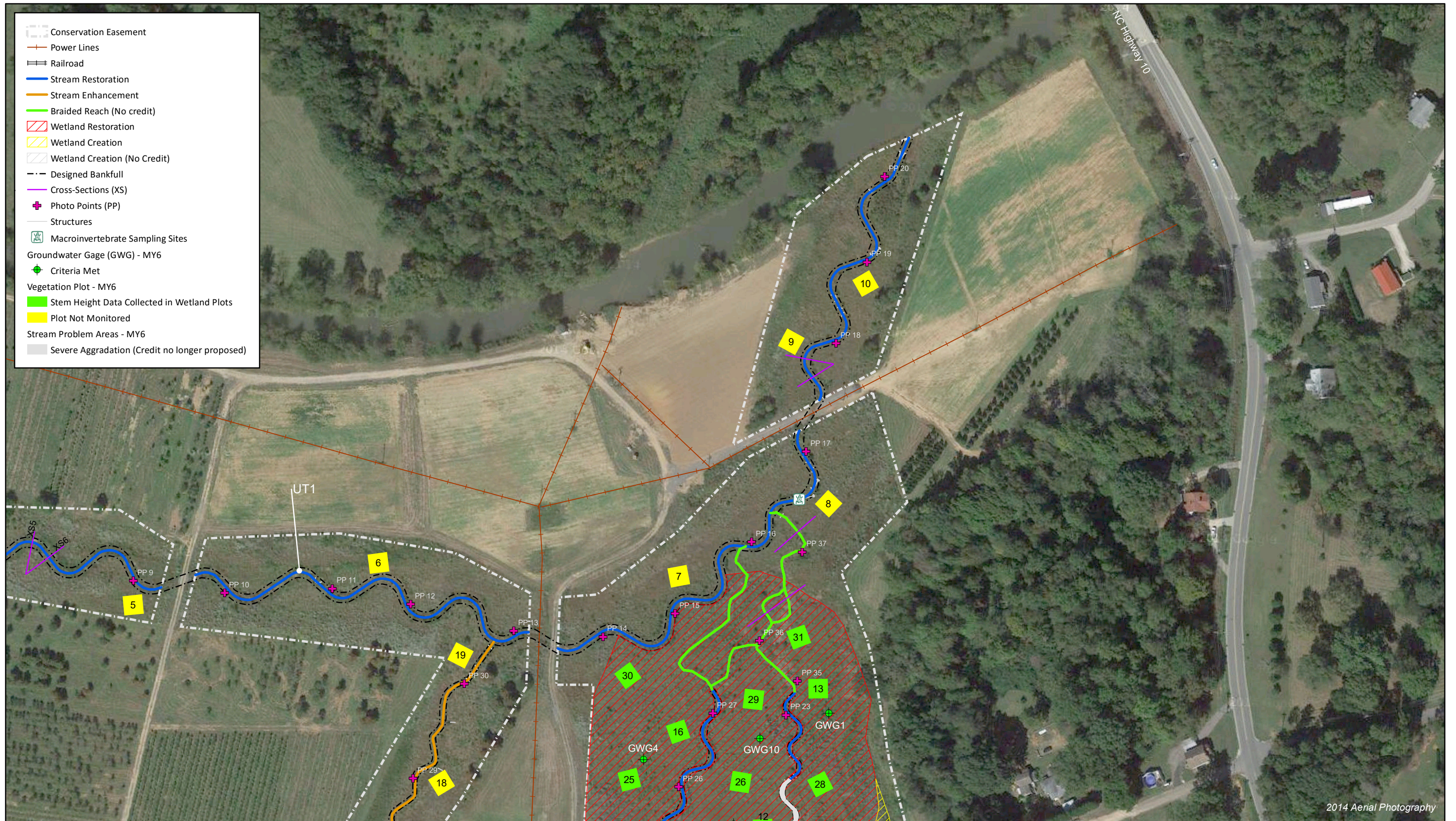


Figure 3.2 Integrated Current Condition Plan View (Sheet 2 of 3)  
 Lyle Creek Mitigation Site  
 DMS Project Number 94643  
 Monitoring Year 6







Lyle Creek - Wetland Vegetation Plot Height Data  
 MY6 (2017)

VP #	Height in ft															Average Ht (ft)
3	8.27	4.07	9.35	2.56	1.77	1.77	6.53	7.74	2.03	2.10	0.39					4.2
12	5.64	3.12	7.45	2.36	7.25	4.69	4.66	3.15								4.8
13	8.56	8.63	9.35	4.36	7.61	21.03	11.35	13.58	21.49	7.22	7.25	18.37	18.64	14.96	10.30	12.2
15	6.30	11.19	8.40	14.21	7.84	2.82	0.00	2.03	11.94	2.17	5.84	10.27				6.9
16	7.45	11.02	11.94	4.53	7.94	9.88	0.00	4.17	7.81	7.09	5.61	10.01	9.74	4.56	11.58	7.6
23	3.41	2.79	7.35	4.66	8.53	4.33	5.31	27.99	18.83							9.2
24	16.40	13.02	16.80	9.58	3.35	6.92	7.32	3.18	5.87	5.09	5.48	7.94	5.54	4.79	5.74	7.8
25	18.41	8.01	12.14	6.89	17.81	11.68	17.91	19.00	17.55	15.75	6.86					13.8
26	5.45	2.40	5.41	6.30	2.59	4.89	7.05	11.75	8.30	4.40	2.10					5.5
27	4.00	4.69	9.19	2.49	13.65	4.40	9.12	5.68		6.30	3.02	10.53	8.10	2.92		6.5
28	14.70	15.68	8.20	12.34	10.37	7.68	4.79	1.57	12.80	6.50	4.72	4.72				8.7
29	10.01	4.76	10.86	10.60	7.84	4.56	5.84	10.43								8.1
30	8.99	10.47	12.89	10.96	5.35	4.30	8.89	7.41	5.18							8.3
31	6.10	3.64	8.99	8.27	10.99	3.31	15.45	6.56	4.95	5.91						7.4
32	7.71	7.25	2.59	3.97	6.76	1.35	7.84	7.68								5.6
33	15.45	10.04	8.86	4.33	12.37	9.55	10.07	11.88	20.24	10.60						11.3
34	5.74	6.96	1.84	5.51	9.84	9.02	3.35	7.71	6.96	10.66	5.71	5.71				6.6
35	5.68	4.56	6.73	11.61	4.07	4.89	4.56	2.36	3.22	5.31	5.77	3.35	3.41			5.0
Site Average Planted Height (ft)															7.8	



## **Site Photographs**



**UT1 Upstream Reach**



**Photo Point 1** – view upstream (11/06/17)



**Photo Point 1** – view downstream (11/06/17)



**Photo Point 2** – view upstream (11/06/17)



**Photo Point 2** – view downstream (11/06/17)



**Photo Point 3** – view upstream (11/06/17)



**Photo Point 3** – view downstream (11/06/17)





**Additional Easement Markers and Vegetation Re-established (11/06/17)**

**UT1B Upstream Reach**



**Photo Point 25 – view upstream (11/06/17)**



**Photo Point 25 – view downstream (11/06/17)**



**UT1B – view upstream (11/06/17)**



**UT1B – view downstream (11/06/17)**