

Gabriola Streamkeepers

## **Rainfall on Gabriola 2016/17**

This file is an addendum to:

<http://www.nickdoe.ca/pdfs/Webp674.pdf>

The dashed curves in the graphs below are Environment Canada Nanaimo Airport averages for the years 1944–2014, normalised from the airport average of 1112 mm to Gabriola's 958 mm.

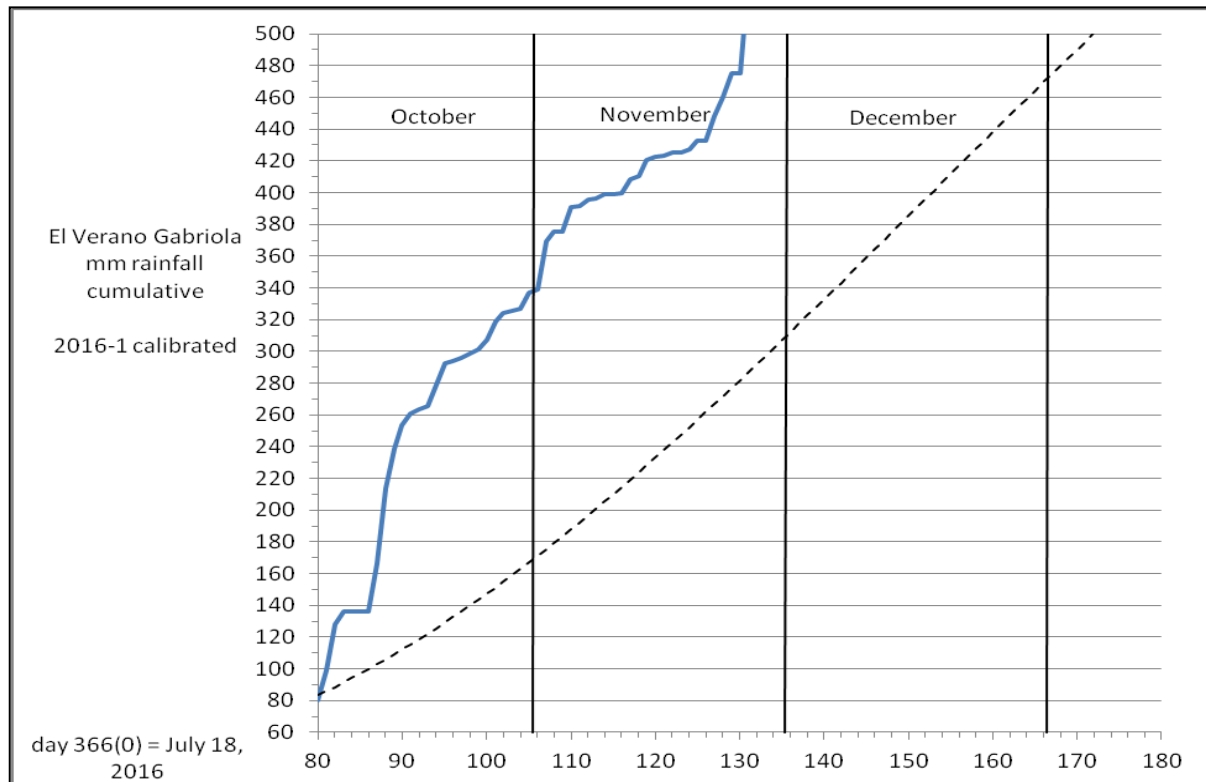
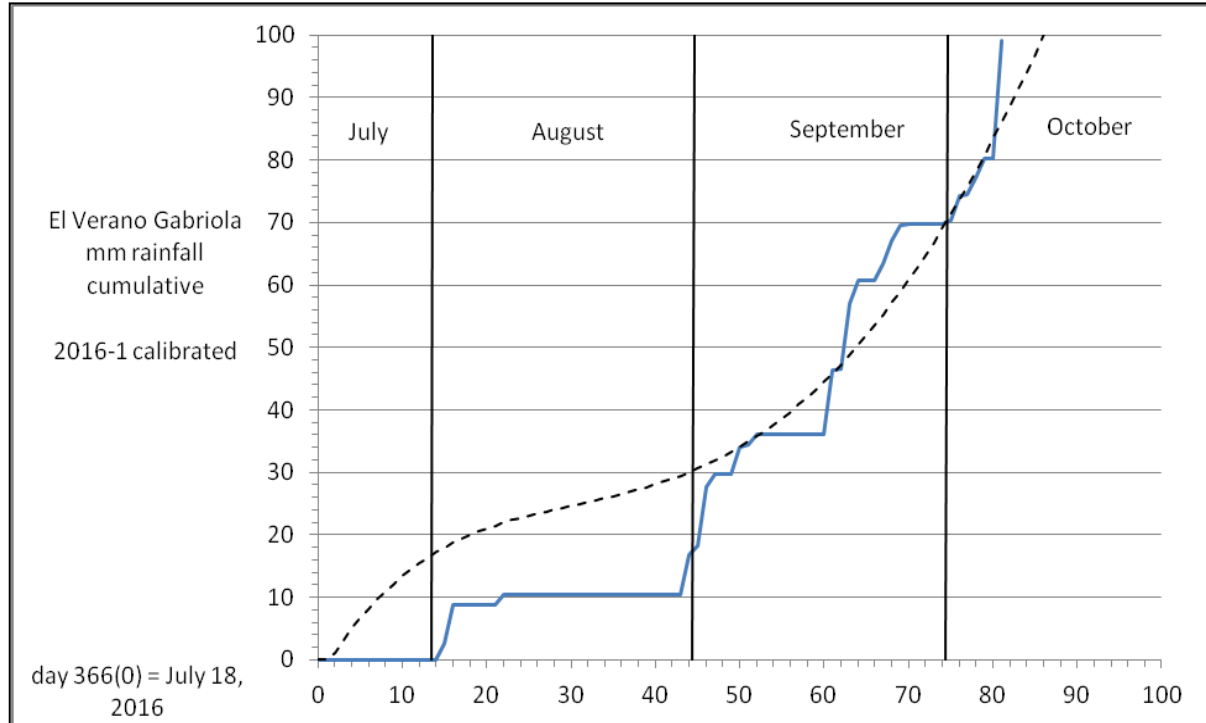
**SNOW:** Snow is commonly converted into rainfall equivalents in meteorological records, the same is done here with the exception that the precipitation is not, as it usually is, assigned to the actual day the snow fell, but to the time that the snow melts. This may be several days later and usually results in a spike in the precipitation record.

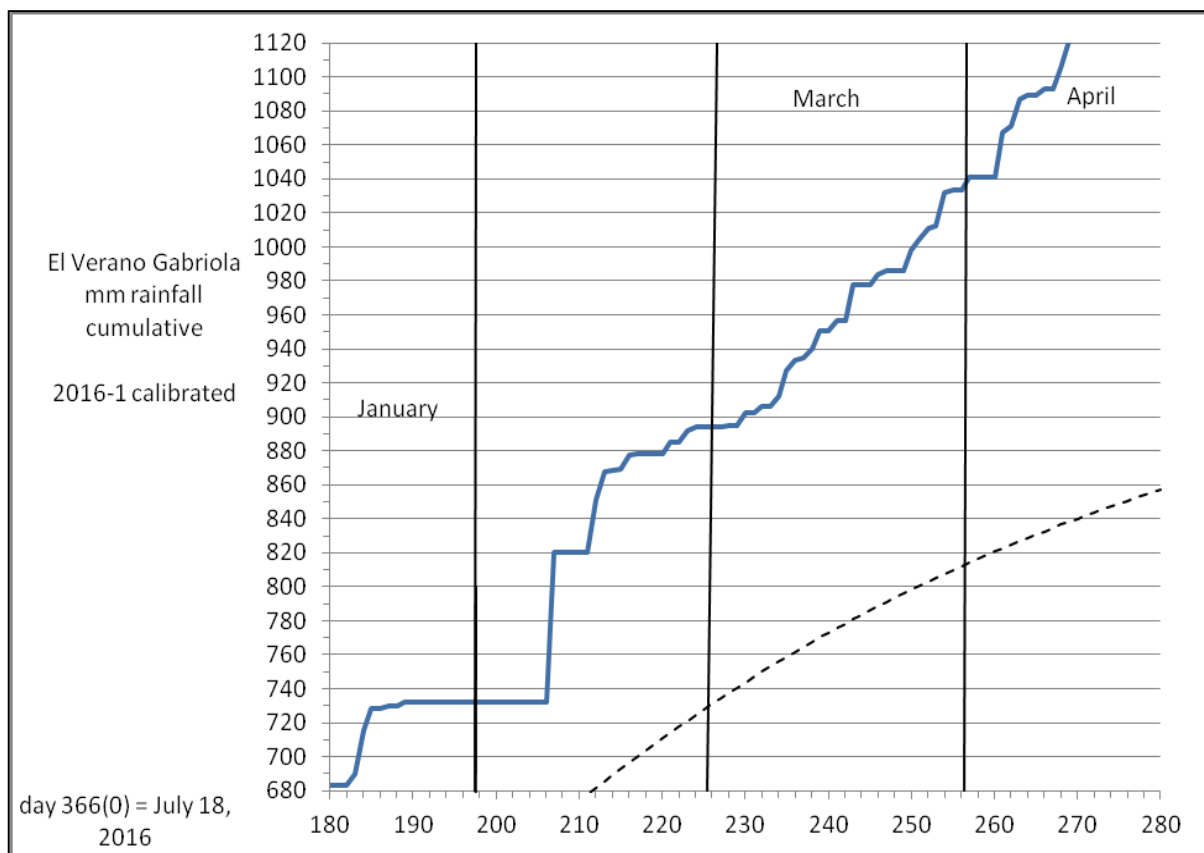
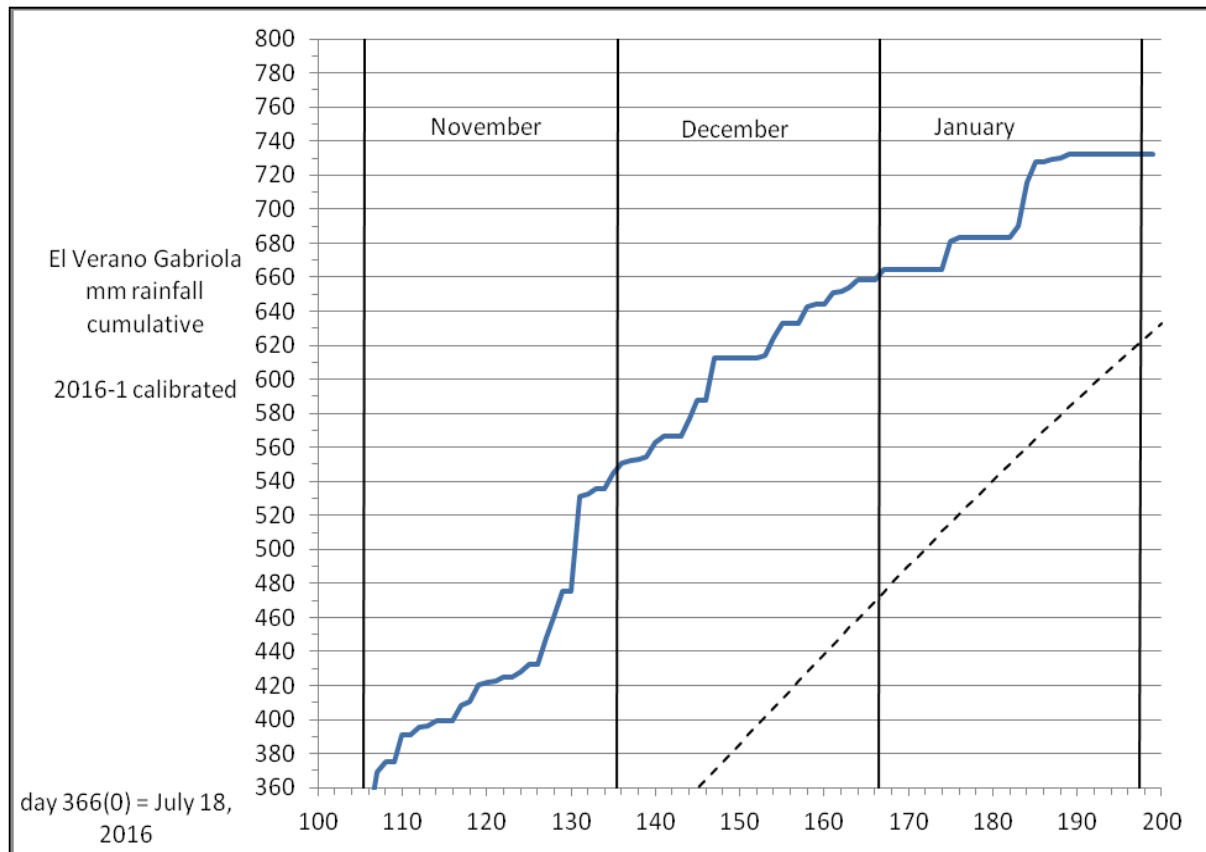
The purpose of this is to reflect more accurately precipitation as experienced by the creeks on the island. Heavy snowfalls do not immediately affect the flow rates of creeks; it is only when the accumulated snow melts that the increase in runoff comes into effect.

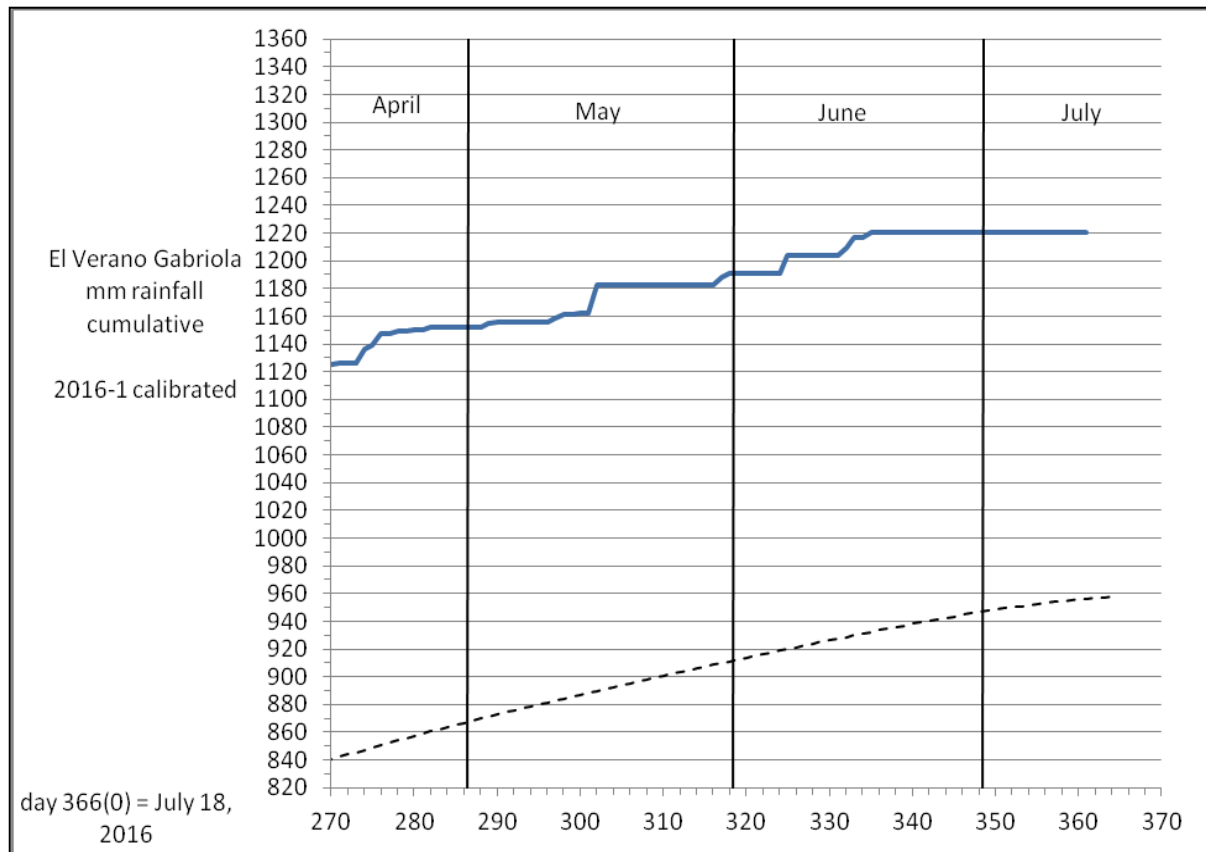
### Gabriola Streamkeepers

## Rainfall on Gabriola 2016/17

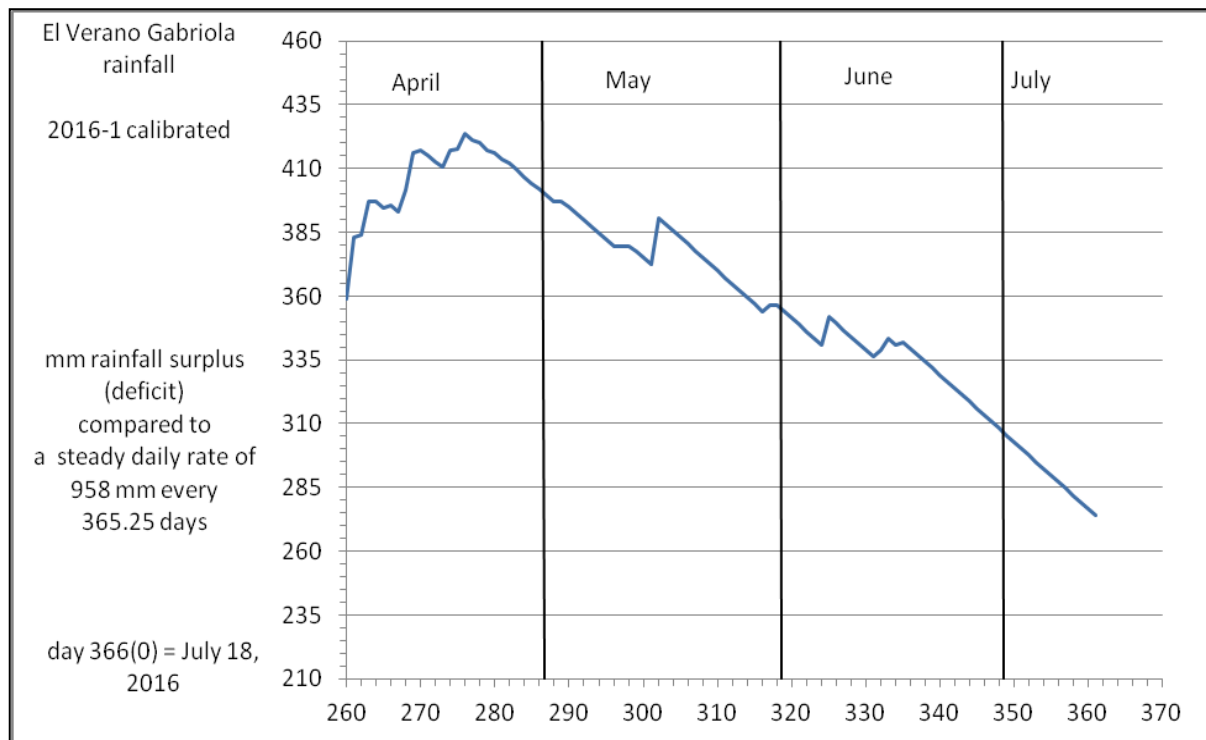
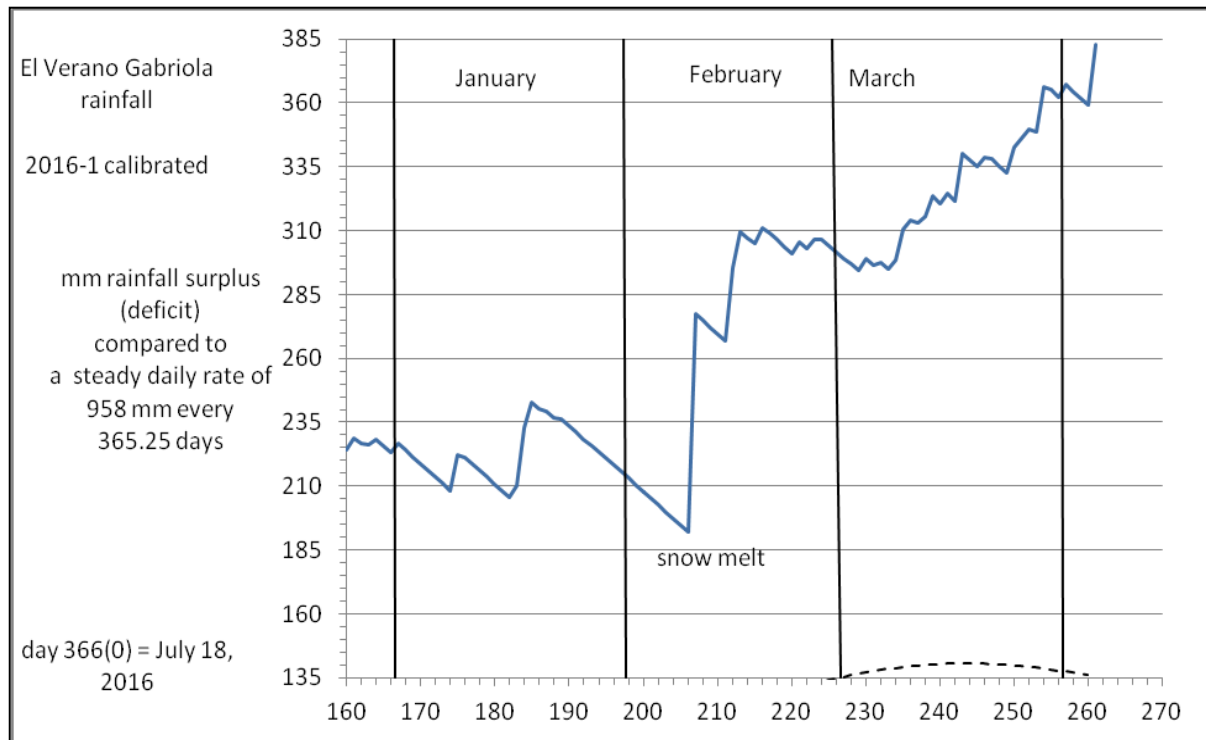
### Observations

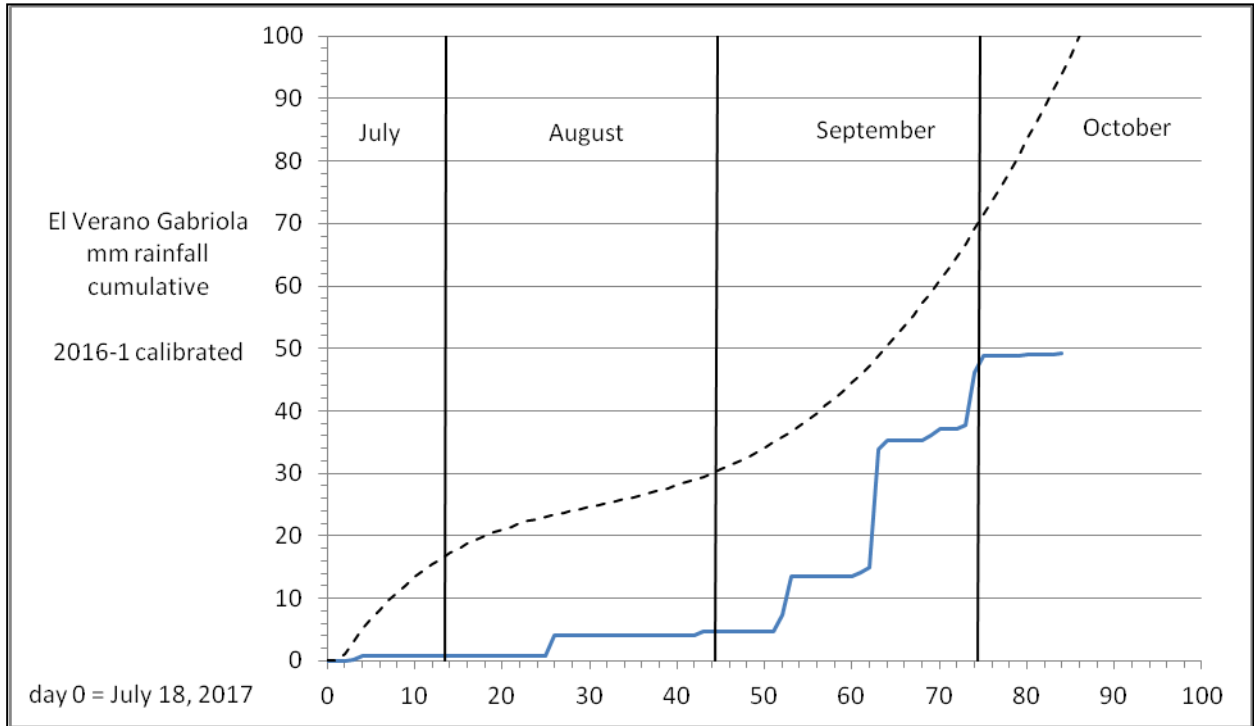












**Field notes for 2016/17 [these notes include the 2016-1 gauge calibration]**

July 18, 2016 is day 366 (0). start of new year

July 22, 2016: El Verano 0 mm; Marsh 0 mm.

July 29, 2016: El Verano 0 mm; Marsh 0 mm.

August 1, 2016 is day 380 (14)

August 5, 2016: El Verano 8.8 mm; Marsh 6.2 mm.

August 11, 2016: El Verano 10.4 mm; Marsh 7.8 mm.

August 16, 2016: El Verano 10.4 mm; Marsh 7.8 mm.

August 21, 2016: El Verano 10.4 mm; Marsh 7.8 mm.

August 26, 2016: El Verano 10.4 mm; Marsh 7.8 mm.

August 31, 2016: El Verano 16.7 mm; Marsh 15.1 mm.

The level in the marsh is currently  $-0.16$  m (last year  $-0.41$  m). In weir bay  $-0.87$  m (last year  $-0.97$  m).

Monthly precipitation: El Verano 16.7 mm; Marsh 15.1 mm; Nanaimo airport 23.4 mm

Cummulative: EV/EV = 100%; CM/EV = 90%; NanA/EV = 140%.

September 1, 2016 is day 411 (45)

September 4, 2016: El Verano 29.7 mm; Marsh 27.1 mm.

September 9, 2016: El Verano 36.0 mm; Marsh 35.4 mm.

September 13, 2016: El Verano 36.0 mm; Marsh 35.4 mm.

September 16, 2016: El Verano 36.0 mm; Marsh 35.4 mm.

September 18, 2016: El Verano 46.5 mm; Marsh 49.0 mm.

September 22, 2016: El Verano 60.7 mm; Marsh 68.4 mm.

September 27, 2016: El Verano 69.7 mm; Marsh 78.3 mm.

September 29, 2016: El Verano 69.7 mm; Marsh 78.3 mm: last year EV 51.7 mm, M 55.9 mm.

Last year, a strong El Niño year, we had a dry summer and a wet winter, with annual precipitation above average. This year looks like being closer to an average year.

The level in the marsh is currently  $-0.17$  m (last year  $-0.45$  m). In weir bay  $-0.83$  m (last year  $-0.94$  m).

Monthly precipitation: El Verano 53.0 mm; Marsh 63.2 mm; Nanaimo airport 29.9 mm

Cummulative: EV/EV = 100%; CM/EV = 112%; NanA/EV = 76% [missing some days?].

October 1, 2016 is day 441 (75)

October 4, 2016: El Verano 77.1 mm; Marsh 83.4 mm.

October 9, 2016: El Verano 136.4 mm; Marsh 151.4 mm.



October 10, 2016: El Verano 136.4 mm; Marsh 151.4 mm.

October 15, 2016: El Verano 238.6 mm; Marsh 251.4 mm.

The wet season has started 3-4 weeks earlier than last year.

October 18, 2016: El Verano 263.7 mm; Marsh 291.4 mm.

October 22, 2016: El Verano 293.5 mm; Marsh 320.4 mm.

October 25, 2016: El Verano 301.3 mm; Marsh 331.4 mm.

October 28, 2016: El Verano 324.1 mm; Marsh 351.3 mm.

The level in the marsh is currently +0.22 m (last year -0.30 m). In weir bay -0.32 m (last year -0.81 m).

Monthly precipitation: El Verano 267.5 mm; Marsh 286.1 mm; Nanaimo airport 294.2 mm

Cummulative: EV/EV = 100%; CM/EV = 104%; NanA/EV = 103%.

#### November 1, 2016 is day 472 (106)

November 1, 2016: El Verano 339.3 mm; Marsh 366.4 mm.

November 3, 2016: El Verano 375.5 mm; Marsh 408.4 mm.

November 7, 2016: El Verano 395.7 mm; Marsh 435.8 mm.

November 11, 2016: El Verano 399.3 mm; Marsh 438.3 mm.

November 15, 2016: El Verano 422.3 mm; Marsh 461.4 mm.

November 18, 2016: El Verano 425.0 mm; Marsh 467.7 mm.

November 24, 2016: El Verano 475.3 mm; Marsh 532.7 mm.

November 28, 2016: El Verano 535.4 mm; Marsh 598.7 mm.

The level in the marsh is currently +0.27 m (last year -0.06 m). In weir bay -0.21 m (last year -0.48 m).

Monthly precipitation: El Verano 207.6 mm; Marsh 244.7 mm; Nanaimo airport 205.3 mm

Cummulative: EV/EV = 100%; CM/EV = 110%; NanA/EV = 101%.

#### December 1, 2016 is day 502 (136)

December 4, 2016: El Verano 554.3 mm; Marsh 619.6 mm.

December 11, 2016: El Verano 587.3 mm; Marsh 635.3 mm.

December 16, 2016: El Verano 612.5 mm; Marsh 652.4 mm.

December 24, 2016: El Verano 643.9 mm; Marsh 666.3 mm.

The level in the marsh is currently +0.26 m (last year +0.08 m). In weir bay -0.25 m (last year -0.31 m).

Monthly precipitation: El Verano 113.7 mm; Marsh 76.4 mm; Nanaimo airport 120.6 mm

Cummulative: EV/EV = 100%; CM/EV = 101%; NanA/EV = 102%.

#### January 1, 2017 is day 533 (167)

January 2, 2017: El Verano 664.7 mm; Marsh 693.6 mm.

January 18, 2017: El Verano 715.5 mm; Marsh 749.6 mm.

January 24, 2017: El Verano 732.0 mm; Marsh 765.3 mm.

January 28, 2017: El Verano 732.0 mm; Marsh 766.0 mm.

The level in the marsh is currently +0.25 m (last year +0.09 m). In weir bay -0.33 m (last year -0.23 m).

Monthly precipitation: El Verano 73.8 mm; Marsh 81.1 mm; Nanaimo airport 67.4 mm  
Cummulative: EV/EV =100%; CM/EV = 105%; NanA/EV = 101%.

#### February 1, 2017 is day 564 (198)

February 2, 2017: El Verano 732.3 mm; Marsh 766.5 mm.

February 13, 2017: El Verano 820.3 mm; Marsh 854.5 mm.

February 15, 2017: El Verano 851.3 mm; Marsh 892.5 mm.

February 18, 2017: El Verano 869.1 mm; Marsh 905.0 mm.

February 21, 2017: El Verano 878.1 mm; Marsh 913.4 mm.

February 26, 2017: El Verano 891.6 mm; Marsh 925.9 mm.

The level in the marsh is currently +0.25 m (last year +0.15 m). In weir bay -0.32 m (last year -0.32 m).

Monthly precipitation: El Verano 162.0 mm; Marsh 161.9 mm; Nanaimo airport 171.9 mm  
Cummulative: EV/EV =100%; CM/EV = 104%; NanA/EV = 102%.

#### March 1, 2017 is day 592 (226)

March 3, 2017: El Verano 895.0 mm; Marsh 929.0 mm.

March 10, 2017: El Verano 926.9 mm; Marsh 952.1 mm.

March 15, 2017: El Verano 950.3 mm; Marsh 978.4 mm.

March 22, 2017: El Verano 985.8 mm; Marsh 1016.4 mm.

March 27, 2017: El Verano 1010.8 mm; Marsh 1039.5 mm.

The level in the marsh is currently +0.30 m (last year +0.19 m). In weir bay -0.28 m (last year -0.35 m).

Monthly precipitation: El Verano 139.5 mm; Marsh 133.9 mm; Nanaimo airport 152.4 mm  
Cummulative: EV/EV =100%; CM/EV = 101%; NanA/EV = 103%.

#### April 1, 2017 is day 623 (257)

April 2, 2017: El Verano 1041.1 mm; Marsh 1069.5 mm.

April 8, 2017: El Verano 1089.4 mm; Marsh 1117.5 mm.

April 13, 2017: El Verano 1121.5 mm; Marsh 1158.5 mm.

April 22, 2017: El Verano 1149.1 mm; Marsh 1191.5 mm.

The level in the marsh is currently +0.35 m (last year +0.17 m). In weir bay -0.34 m (last year -0.48 m).

Monthly precipitation: El Verano 118.6 mm; Marsh 134.9 mm; Nanaimo airport 137.2 mm  
Cummulative: EV/EV =100%; CM/EV = 103%; NanA/EV = 104%.

**May 1, 2017 is day 653 (287)**

May 24, 2017: El Verano 1182.9 mm; Marsh 1248.5 mm.

May 29, 2017: El Verano 1182.9 mm; Marsh 1248.5 mm.

The level in the marsh is currently +0.32 m (last year +0.11 m). In weir bay -0.44 m (last year -0.52 m).

Monthly precipitation: El Verano 35.6 mm; Marsh 55.1 mm; Nanaimo airport 43.2 mm  
Cummulative: EV/EV =100%; CM/EV = 105%; NanA/EV = 105%.

**June 1, 2017 is day 684 (318)**

June 8, 2017: El Verano 1204.2 mm; Marsh 1264.1 mm.

June 12, 2017: El Verano 1204.3 mm; Marsh 1264.1 mm.

June 16, 2017: El Verano 1216.7 mm; Marsh 1292.5 mm.

June 18, 2017: El Verano 1220.5 mm; Marsh 1297.7 mm.

June 22, 2017: El Verano 1220.8 mm; Marsh 1297.7 mm.

The level in the marsh is currently +0.26 m (last year +0.07 m). In weir bay -0.56 m (last year -0.58 m).

Monthly precipitation: El Verano 32.8 mm; Marsh 45.5 mm; Nanaimo airport 30.8 mm  
Cummulative: EV/EV =100%; CM/EV = 106%; NanA/EV = 105%.

**July 1, 2017 is day 714 (348)**

July 1, 2017: El Verano 1220.8 mm; Marsh 1297.7 mm.

July 8, 2017: El Verano 1220.8 mm; Marsh 1297.7 mm.

July 17, 2017: El Verano 1220.8 mm; Marsh 1297.7 mm.

**July 18, 2017 is day 731 (0). start of new year**

July 28, 2017: El Verano 0.8 mm; Nanaimo Airport 0.4 mm.

The level in the marsh is currently +0.19 m (last year -0.03 m). In weir bay -0.69 m (last year -0.73 m).

Monthly precipitation: El Verano 0.8 mm; Nanaimo airport 0.4 mm  
Cummulative: EV/EV =100%; NanA/EV = 49%.

**August 1, 2017 is day 745 (14)**

August 7, 2017: El Verano 0.8 mm; Nanaimo Airport 0.4 mm.

August 17, 2017: El Verano 4.0 mm; Nanaimo Airport 2.8 mm.

August 27, 2017: El Verano 4.0 mm; Nanaimo Airport 2.8 mm.

The level in the marsh is currently +0.00 m (last year -0.16 m). In weir bay -0.82 m (last year -0.87 m).

Monthly precipitation: El Verano 3.9 mm; Nanaimo airport 3.0 mm

Cummulative: EV/EV =100%; NanA/EV = 73%.

September 1, 2017 is day 776 (45)

September 6, 2017: El Verano 4.7 mm; Nanaimo Airport 3.4 mm.

September 16, 2017: El Verano 13.5 mm; Nanaimo Airport 13.2 mm.

September 26, 2017: El Verano 37.1 mm; Nanaimo Airport 41.2 mm.

The level in the marsh is currently -0.05 m (last year -0.17 m). In weir bay -0.83 m (last year -0.83 m).

Monthly precipitation: El Verano 41.5 mm; Nanaimo airport 48.0 mm

Cummulative: EV/EV =100%; NanA/EV = 111%.

October 1, 2017 is day 806 (75)

October 6, 2017: El Verano 48.9 mm; Nanaimo Airport 51.6 mm.

◇