

## Introduction

The Federal and Provincial governments operate hundreds of hydrological stations to monitor stream flow so that the data can be used to make flooding forecasts and appropriate water management decisions.

In this lesson, we will learn how to obtain stream flow and discharge data from a government-controlled water quantity station in a watershed near your home.

## Instructions

1. In your search bar, enter the website:  
[wateroffice.ec.gc.ca](http://wateroffice.ec.gc.ca)
2. Select **Real-Time Hydrometric Data**.
3. Select **Station Search**.
4. In the Station Name box enter **Big Sheep Creek Near Rossland** or **your selected station name or station number** (select the station near you from the List of Stations provided next page).
5. Scroll down and select **Search**.
6. The box beside Big Sheep Creek should be checked; select **View Report**.

You should see a green and yellow data plot for Big Sheep Creek for the past several days. The green line represents Water Level which is measured in meters. The yellow line is Discharge measured in cubic meters per second. To give you an idea of what a cubic meter looks like, just imagine a bale of hay going by you every second. Although the graphs look similar, their values are different.

We are interested in knowing when peak freshet occurred so we will need to see the changes over the spring months of March, April and May.

7. Move off the graph. Use the slide bar to scroll down to the **Modify Settings** table. In the Start Date box change the date to **2020-03-21** (the first day of Spring). Scroll down and select **Apply Settings**.
8. By positioning the cursor at the top of each peak, record the maximum value and date for both Water Level and Discharge.



Now let's compare these peak levels to last year.

9. Scroll down to the **Modify Settings** table again. In the **Start Date** box change the date to **2019-01-01** or whatever the date it allows for historic analysis. Select **Apply Settings**.

Water Level and Discharge is now plotted from January 1st 2019 to today's date. Two peaks are displayed representing Spring freshet for May 2019 and May 2020.

10. Place the cursor over the maximum discharge peak for last year, record the value and the date, and compare with this year. *Which year had the greatest discharge?*
11. Use the cursor to obtain the lowest discharge. Note the date and the value. *When did the lowest discharge occur and what factors influence low flows?*

Based on these two years of data, we could predict that next year the discharge will likely peak around the middle of May. However, weather plays an important factor and can influence the amount and timing of discharge.

Hydrologists study the variation in peaks and lows of stream flow so that they can make flood forecasts in the Spring and issue warnings of water conservation practises in the summer.

# Predicting Stream Flow continued

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## List of Water Quantity Stations from WSC website in the Columbia Basin Area

### **Kimberley / Cranbrook area:**

Mather Creek below Houle Creek (08NG076)

Kootenay River at Fort Steele (08NG065)

### **Elko, Fernie, Sparwood area:**

Elk River below Elko Dam Diversion (08NK070)

Elk River at Fernie (08NK002)

Hosmer Creek above diversions (08NK026)

### **Creston area:**

Sullivan Creek near Canyon (08NH115)

### **Revelstoke area:**

Illecillewaet River at Greely (08ND013)

### **Slocan/ Nelson area:**

Lemon Creek above South Lemon Creek (08NJ160)

### **Rossland/ Salmo area:**

Hidden Creek near the mouth (08NE114)

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