436: Snow in the Cascades

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To preface for the rest of the paper: snow water equivalent (swe) is the measure the depth of water that would theoretically result if the entire snowpack were melted instantaneously.

1

How much snow is there on Jan 1st? How do the two locations compare?

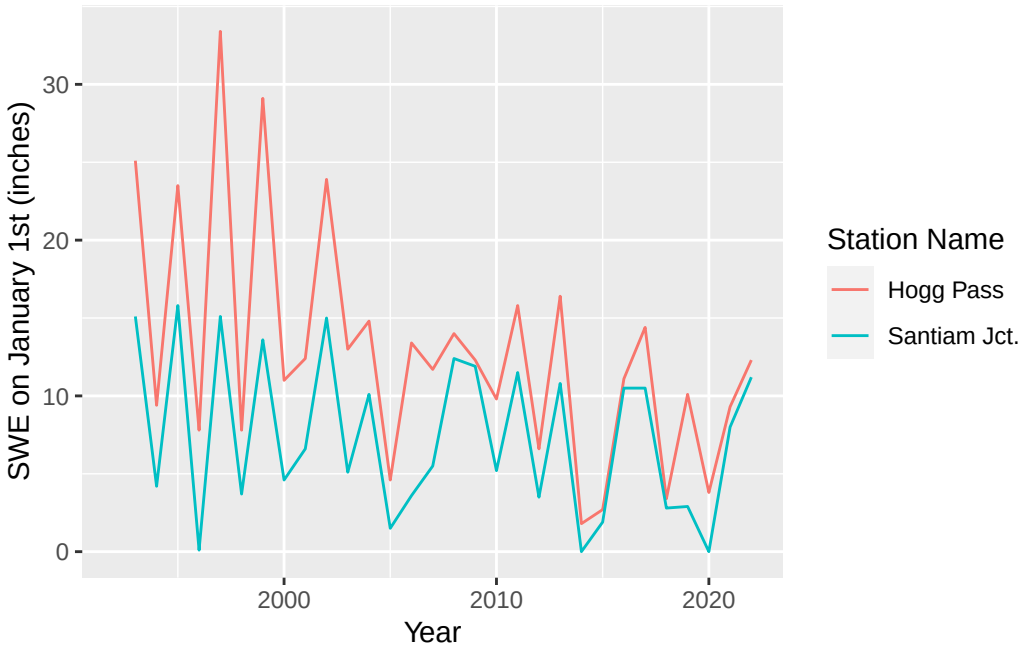

Figure 1: Amount of Snow Water Equivalent on January 1st from 1992 to 2022

Answer

As is seen from the above graph, the two locations seem to generally follow the same trends with Hogg Pass always having more snow water equivalent than Santiam Junction. The two also seem to be approaching the same value in more recent years.

2

Is there any change in the yearly peak amount of snow over the period 1992-2022?

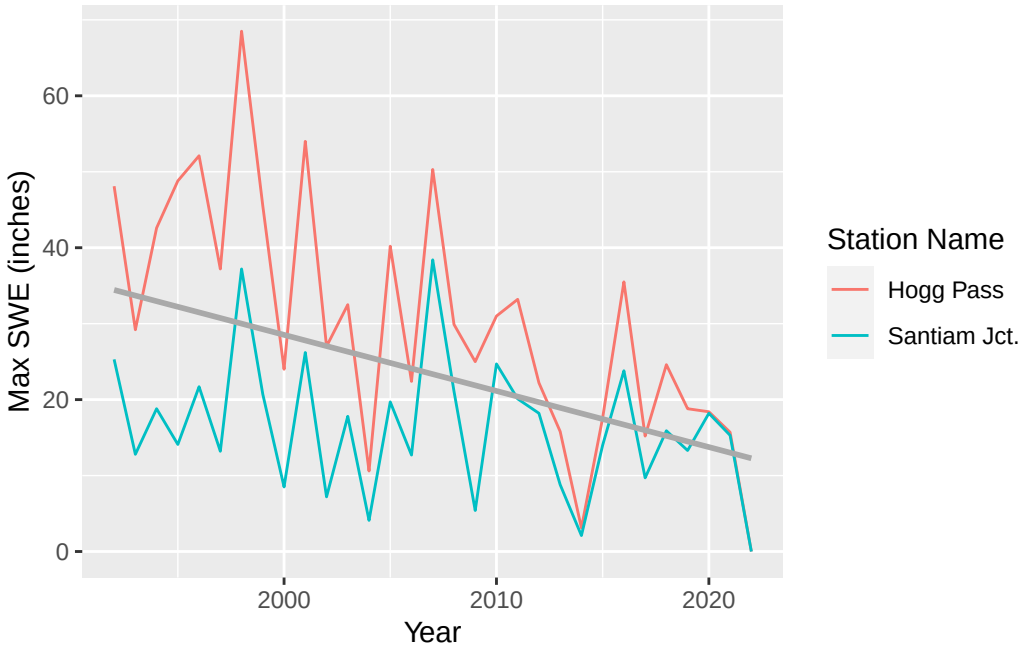

Figure 2: Maximum Snow Water Equivalent per Year by Station from 1992 to 2022

Answer

The general trend seems to be a decline in the maximum snow water equivalent for each station. The best fit line provides a visual representation of this, showing gradual descent from ~34 inches to ~12 inches.

3

Which years were the most extreme?

Table 1: Year with the Highest Snow Water Equivalent for Each Station

Station.Name	Year	SWE
Hogg Pass	1998	68.5
Santiam Jct.	2007	38.4

Answer

The two most extreme years in terms of maximum snow water equivalent are 1998 for Hogg Pass and 2007 for Santiam Junction. The snow water equivalent values, measured in inches, recorded for those years are 68.5 and 38.4 respectively.