Topics that Suzanne is interested in the 2020 isotope data and for the paper

Overall goals:

does the ground water contribute to the differences in hydrologic classification of the types of wetlands in Columbia Wetlands.

Is the groundwater a consistent contributor to the wetlands in the two years

Comparison of Groundwater between 2019 and 2020. (by SEASON)

What is the role of seasonal differences in peak water levels on the GW. Are there differences in GW during the summer season due to water levels overtopping the levees in 2020 and not in 2019. (Unfortunately, we took the isotopes prior to the peak water levels, so may only see a difference in the fully connected wetlands).

Does the seasonal amount of Groundwater in the fall of 2019 contribute to the amt of GW in wetlands in spring of 2020.

Is there any way we can determine how old the Groundwater entering the Columbia Wetlands is? Ideally we would like to be able to show that most GW is from same year’s snow melt. See questions below.

What % of groundwater do the small tributary creeks (#’s 158,159,141,147, 149,153,156) contain in spring, summer and fall of 2020.

Can we see if there is an increase in GW as we go from small creeks in spring, to large creeks to the Columbia River (which I assume we cannot tell how much GW is in). [The site #’s for small creeks are 158,159,141,149,147,153,156; the sites # for the larger creeks are139,140,83). The Columbia River at different locations are #’s 2,3,37, 95,96,97,105. And 83 (Dutch Creek is essentially the Columbia River at the headwaters).

My questions from our ZOOM meeting were:

1). Run a new model with the 2020 data because some of the most important sites were eliminated with the 2019 data.

* In 2019 data spring, we eliminated 30,35,84; we should try to get #30 in this time. I think it was eliminated in 2019 because there was only 2 cm of water. We should eliminate #35 (Brisco mill/loon pond) because the conductivity is the highest in any place in C Valley. We did not collect #84 (Reflection Lake) in 2020.
* In 2019 summer data we eliminated 35,84,101. We can eliminate all those again. Actually we did not collect 84 and 101 again in 2020.
* In 2019 fall data we eliminated 35,84,101 47,48, 62. We should see if 47,48 & 62 can fit in the model in 2020 because they are very important poorly connected/isolated wetlands.

2). Determine the % groundwater in each of the seasons in 2020 in all the wetlands. Then I would like to determine the % GW as related to Catriona's hydrologic classification and her beaver/ecological classification. I hypothesize that the least connected wetlands have the highest amount of groundwater in all seasons.

4). Why our 2019 paper found higher ground water in the fall than in the spring. Maybe comparison of fall 2019 will help us answer why spring values were low.

5). Is there any way we can we show if the GW is from recent snowmelt- we have more springs and more small creeks in 2020 than we did in 2019. Would a difference between the isotope data from the small creeks compared to the isotope data from the springs & wells suggest that recent snowmelt might be the source of the GW to the wetlands. (Using spring 2020 data).

* Lit search on determining groundwater age – what have other done? Will it be possible? Can I suggest a new analysis?
* Is the % groundwater in sites different between years ( by season) (what would be the test?)

Brisco station meterology

How the fall of 2019 leads in to the spring of 2020

Separate the creeks and the Rivers🡪

Dutch creek- take it out completely (83), also throw out 35 (Brisco mill)

Treat the creeks separately, a new source- is the groundwater a source to the creeks

* Smaller and larger creeks 🡪 2 sizes of creeks,

Are the more isolated wetlands more influenced by wetlands and does that persist over the winter.

Divide creeks in delta-delta plots and in the tertiary plots

Look through the lens of classification.

Influence of groundwater on the creeks🡪