

Discussion Tables Summary



Question 1: How does snowpack and the quality of snow affect the water situation in the Nicola Valley watershed through the seasons?

Table 1

Much discussion about what influences the runoff, freshet, dam operations, and algae blooms.

- Wind, tree cover, low humidity - all affect the rate of melt
- Low snowpack -> shorter spring freshet
- Affects runoff during rain events
- **Algae if lower freshet?**

Table 6

- Snowpack directly affects the water situation.
- The speed of the run-off is an important factor.
- Quality of snow depends on the amount of water in the snowpack.
- Moisture (snow quality), elevation, temperature, speed, and ground cover (logging) are major factors
- Tree cover helps absorb surface water
- **Are current forest practices limiting our ability to maintain a useful snowpack?**
- **What factors are taken into account to make the decisions about drought levels? Can they be expanded?**
- **If the original WUMP wasn't implemented/listened to by government, how are they making the decisions and how can we trust these decisions?**

Question 2: How are drought levels determined?

Table 1

- Groundwater monitoring
- Water flow measurements, temperature
- Field monitoring, fish passage
- Information about this on BC Gov't website seems ambiguous, vague, subjective
- Not clear how to assess data Pre-2021 compared to post-2021.

Table 6

- Snowpack, temperatures, stream flows, groundwater levels
- **Is this the most efficient/responsive way to proceed?**
- **We want better drought monitoring and more timely reporting when water loss is greater than water input.**
- **Will agriculture and food security ever be incorporated into a community/city/regional plan?**

Question 3: How does groundcover (forest, grassland) and loss (through fire, logging, other industrial disturbance, etc.) impact the availability, timing, quantity and quality of water in our watershed?

Table 2

- Lots of discussion about Water Sustainability Act (2014) and Forest Practices Code (in place)
- Studies have been done about groundcover impact and many points made; protection on crown land needed to be enforced - laws are there, e.g, forest companies
- When forest companies are out in “boonies”, things change when close to homes, farms, ranches etc.
- Unknown effects of logging on ecosystem which has been in existence forever
- Many lawsuits on the books with logging companies
- Burned areas need to be addressed for re-seeding and grass
- **How does info from documents get distributed to cities, rural areas, town councils to use info in decisions?**

Table 7

- Grassland cover variable, depending on many factors
- Flooding in 2021 had a big impact and led to environmental change (large snow, high amount of rain in November)
- Snow pack quality -> lack of precipitation -> higher temperatures
- **Last winter (2023) record low snowpack - Nicola Lake still filled on a 50% snowpack. Why?**
- Watershed temperatures were 2-4°C cooler this last year
- Spius, Coldwater, Nicola subsurface flows, more from after the flood
- Logging - easy to pick on - maybe a few practices that can be improved.
- Quality - talked about the 3 C's for water supply (clean, cold, clear)
- Fish evolve to meet new climate, natural selection component to this process
- Fish are first indicator for water health

Question 4: What are the environmental needs of water for fisheries, aquifer recharge, ecosystem function and habitat maintenance?

Table 2

- There are a lot of unknowns, like **what happens after a fire?** Lots of questions and uncertainties
- **Unknown: when water goes underground, where does it go?**
- Quantity and quality of water for all users, **understanding of seasonal flows needed** - back to groundcover removal
- Over time, our thinking has changed and is more informed

Table 7

- Need to develop a feeling for whether things are going good
- There are cycles, we are going to have bad years, basic needs have grown
- Vancouver was also in drought but they have so much water

- **We think we need more water, store water**
- Recharging
- Flood years vs drought years
- Predict the needs - can't predict charging of the aquifer
- Water cycles on 100-year cycles
- **Where do you store it - up higher?**
- Nicola Lake biggest storage
- Nicola Valley - temperature-sensitive systems
- Australia - has to store water for a long time.
- Upland water storage will be needed, crucial

Question 5: What are the ways that you use water and is your supply ample or restricted?

Table 3

Lots of discussion about supply and how it is perceived as restricted and not ample, but how this is subjective in regards to use.

- Used for irrigating, lawns, livestock, residential, co-gen plant (energy), recreation (parks, pools)
- Supply restricted due to licences
- Unknown if ample - depending on use; conserve during hot weather
- **Storage opportunities?**
- Legislation doesn't consider all users

Table 8

- Supply is restricted, through community waterworks, or limited by recharging of wells
- Miller Estates
 - Restricted
- Nicola Lake Well
 - Limited
- Fox Farm
 - Limited
 - Careful
- Lower Nicola
 - Restricted
- Mindful use is necessary
- Wasteful use examples: excess watering of lawns, pools, tap running while doing dishes, infrastructure leaks, excessive shower time, irresponsible use of roof sprinklers

Question 6: What are relative amounts of water used by the industrial, agricultural, recreational and residential sectors of the community?

Table 3

- Used amounts - unknown without groundwater information
- **Require known info on demands/needs of all users - agriculture, industry, residential, recreation**

- **Much is unknown and speculation - is agriculture really a heavy user when the water goes back into the ground? Is water recycled?**
- **More info is needed on who uses how much and what the impacts are (like Co Gen plant)**

Table 8

- Hard to put a number on this
- Differing opinions on agricultural use
- Attitudes & consumption of residential water will decrease over time
- Estimates:
 - Irrigation ~76%
 - Mining Processing ~17%
 - Waterworks - local provider ~6%

Question 7: What is the City of Merritt's water infrastructure and well situation?

Table 4

- 5 wells, 4 at 240', 1 at 500' level, all working
- Kengard well is only 2% usable due to Maganese
- 75% of the current water license can serve a population of 15,000
- Hedge control
- **Commercial limitation?**
- Water Metres installed to be compliant
- Aging infrastructure

Table 9

The Complete Circle document on the City of Merritt website answers this question well (but missing two reservoirs):

https://www.merritt.ca/wp-content/uploads/2020/01/Water-Report_the_complete_circle.pdf

- **How to maintain existing water budget?**
- **Re-allocation or expanding water budget for future developments. What are the limitations?**
- **How does water get distributed?**

Question 8: How could the expansion of the City of Merritt's boundaries to include the new developments impact the perceived shortage of water?

Table 4

- Is the water shortage perceived? (operating within water license)
- Limit high water use businesses
- The City is aware of high water users, looking for companies to settle in Merritt that are low water users

- Can we have enough water to not be limited commercially? Or for river levels? Or agriculturally?
- Why is there development when there are restrictions?
- Is the aquifer accurately measured? How is it measured?
- What is the impact on river levels?

Table 9

- Is it a perceived or true water shortage?
- **Water storage - Do we have enough? How can we implement more storage?**
- By Expanding boundaries we risk not having the water supply to service new developments.
- **How fast do aquifers recharge?**
- Biggest questions raised were regarding water storage and water meters
- Conservation measures: We live in a desert.
- **Where is all this going? Critical questions to ask tomorrow!**

Question 9: Why is Merritt's average water consumption higher than that of BC as a whole? (742 litres/day/person vs 503 litres/day/person)

Table 5

- Pipes could be cracked
- Older infrastructure
- Drier climate → need more water
- People washing cars/trucks
- Younger generations are unaware of where water comes from
- **It's not where is the water going, it's why isn't it coming?**
- People don't feel responsible for their own water use, are uneducated about water

Table 10

- No water meters in use
- Aging water infrastructure
- Larger lots = more irrigation
- Not as densely populated as other areas
- Lack of awareness of water usage (not aware how much is being used, and how much water some plants like cedars use)
- Lack of water education
- **More public green space per capita?**

Question 10: Are local water conservation measures effective? Would water metering improve them?

Table 5

- No, metering alone would not improve water conservation, people will just pay for it
- We should be measuring the effectiveness of conservation
- Need to build the "buy in" → youth will educate the community

- Shutting off activities which require a lot of water, like irrigation
- Saving water earlier in the year to have more later on
- The City went to a level 3 water restriction early in 2024 and didn't have to upgrade to level 4 while other communities did

Table 10

- Don't know - haven't seen any stats on it, but meters would probably help
- Would help pinpoint water leaks
- Improve people's use of water
- Help determine how and where water is used
- Water restrictions on private property during summer months
- Solution: give incentives to use less water
 - Incentives to plant water-wise & water retention
 - Incentives to plant trees & shrubs for shade.
 - Education for grass additives & alternatives
 - Incentives for water catchments, ie: rain barrels.

Nicola Watershed Community Round Table

PO Box 400

Merritt, BC V1K 1B8

www.nwcrt.ca

