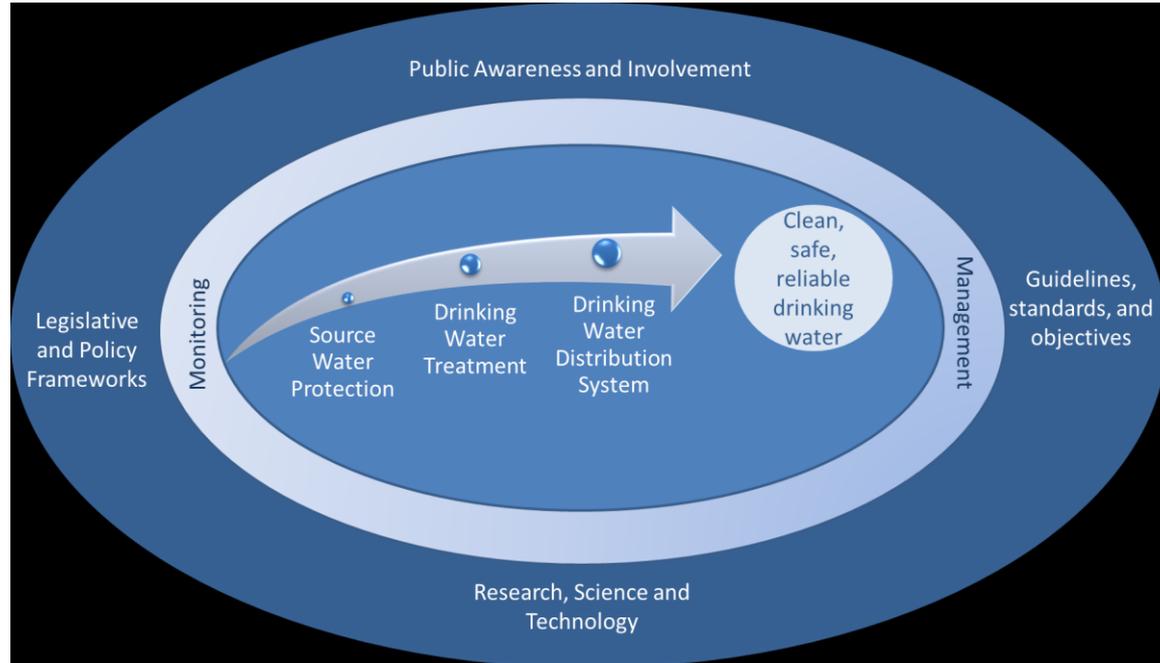


WaterSHED Monitoring Program: Improving Source Water Protection Planning

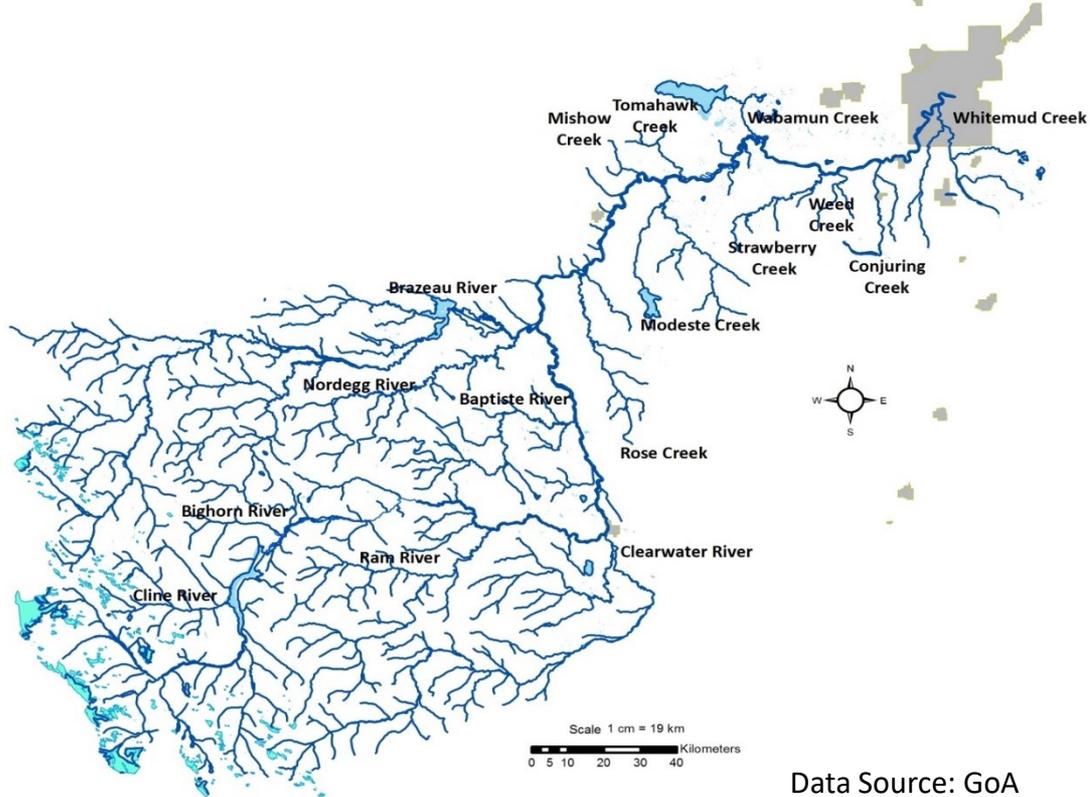
December 6, 2023

NSWA Watershed Wednesday

Multi-barrier Approach to Clean, Safe, Reliable Drinking Water

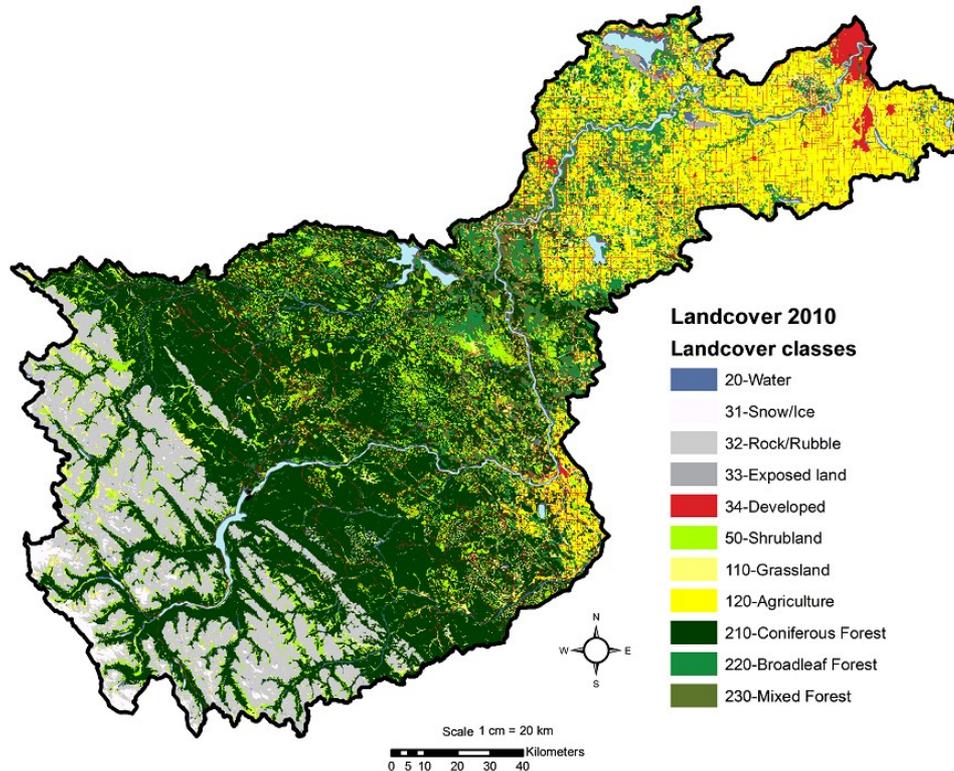


Edmonton's Source Water Area

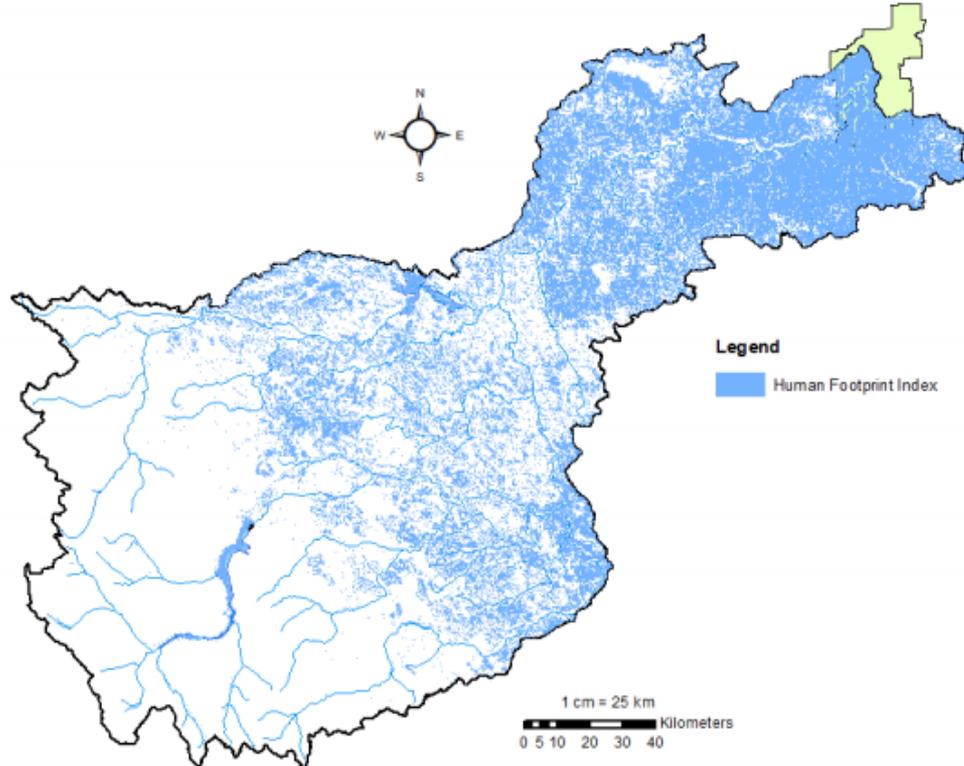


Data Source: GOA

Edmonton's Source Water Area



Edmonton's Source Water Area



Human Footprint:

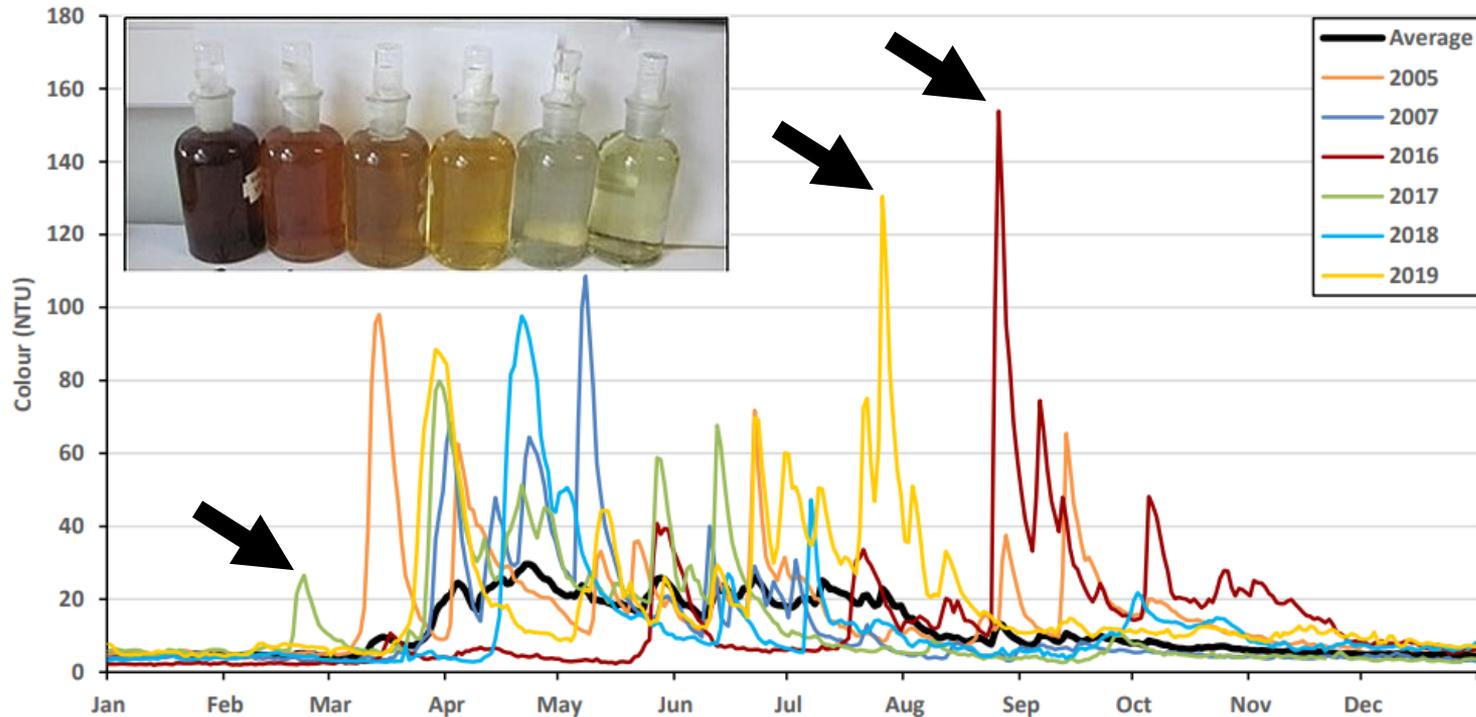
- 27.0% in 2012
- 30.7% in 2018



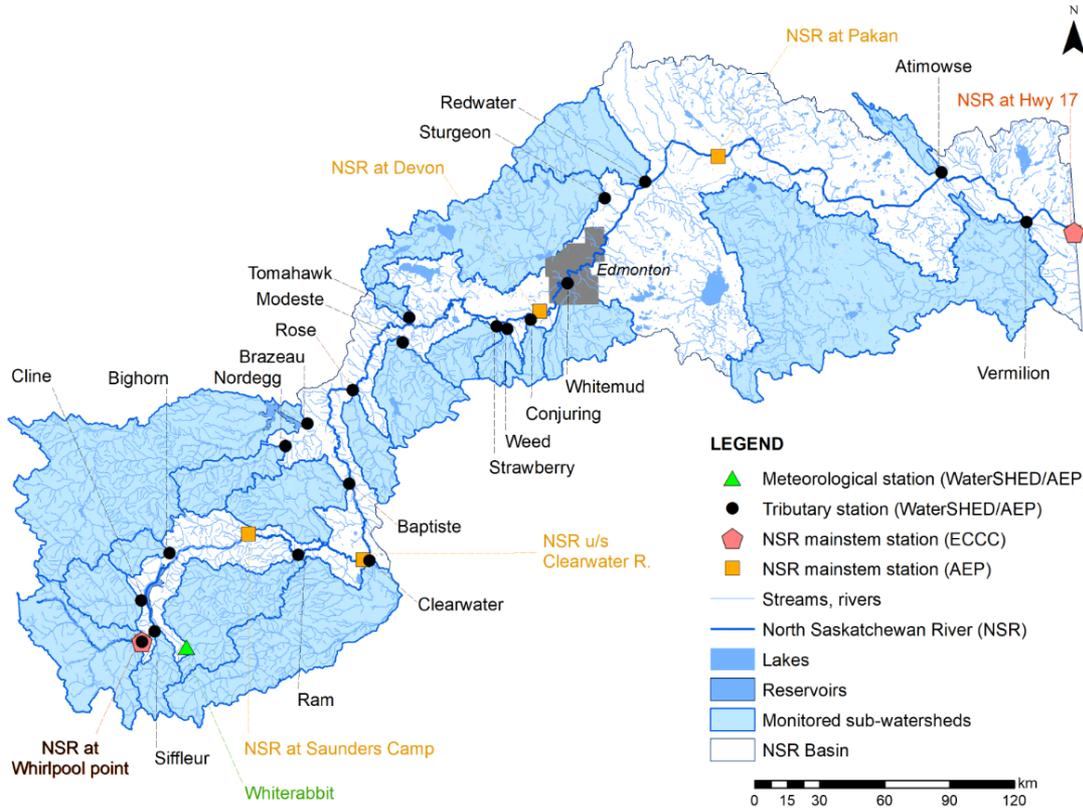
How Healthy is the North Saskatchewan River from a Drinking Water Perspective?

- EPCOR's drinking water meets or exceeds all provincial and federal drinking water quality guidelines
- ~ 13,000 samples and ~ 270,000 results run per year

Colour: A Key Parameter for Water Treatment

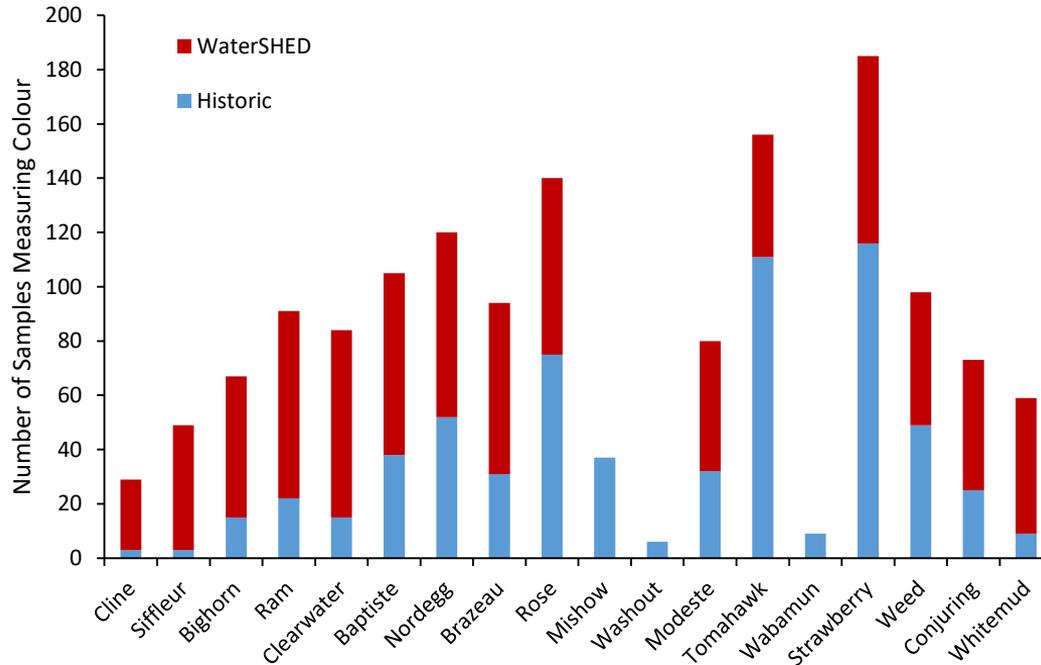


WaterSHED Monitoring Program

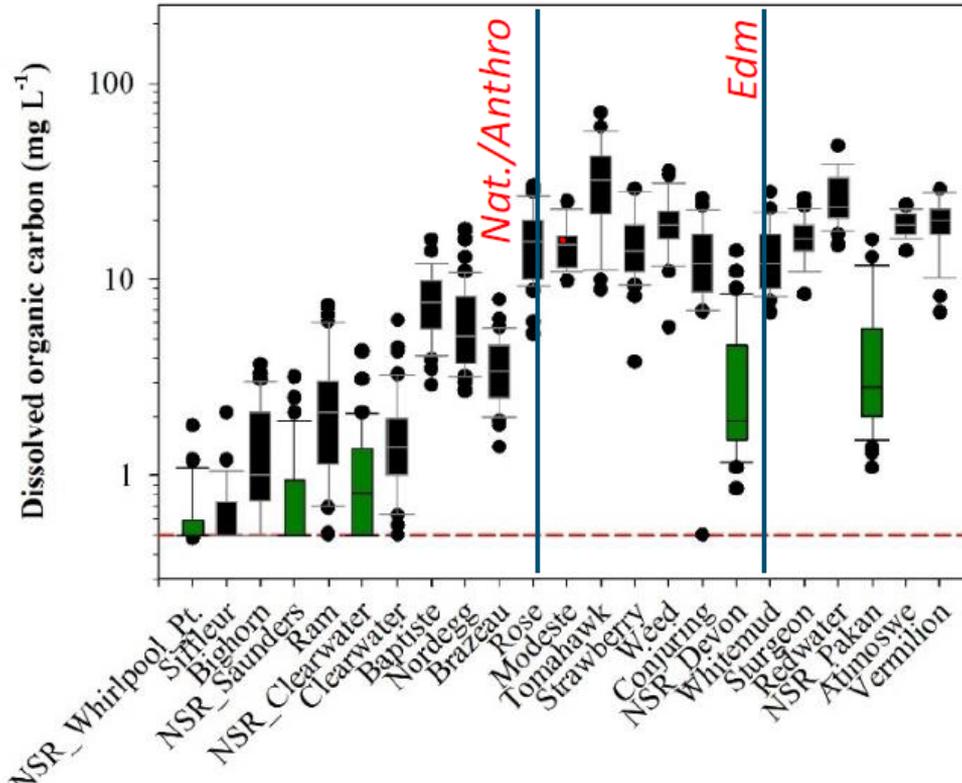


- 20 water quality monitoring stations
- Sondes and cameras
- Over 800 grab samples collected upstream of Edm.
- 6 new flow-monitoring stations upstream of Edm.
- 1 new meteorological station

Historical and WaterSHED Colour Data

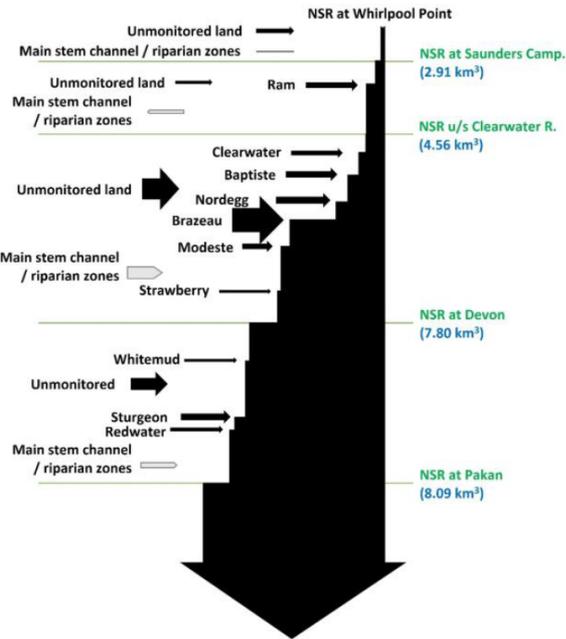


Dissolved Organic Carbon Concentrations

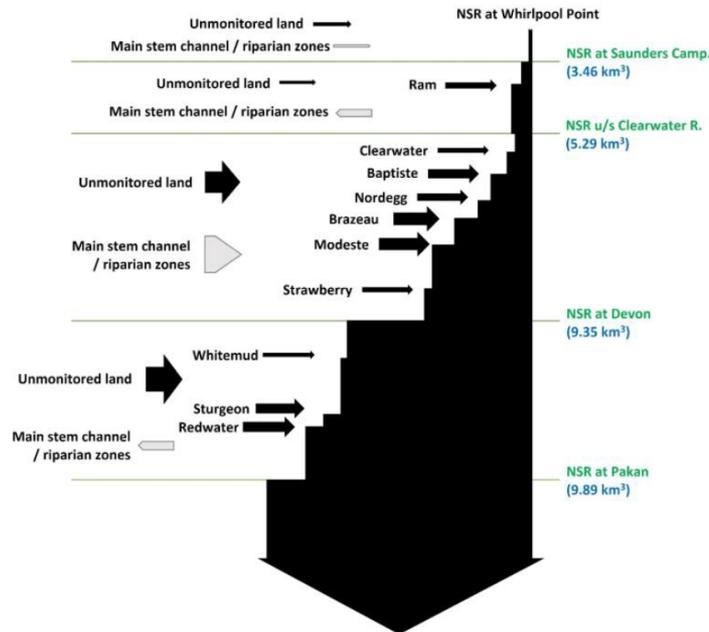


Annual Loads of Dissolved Organic Carbon

2019



2020



2021

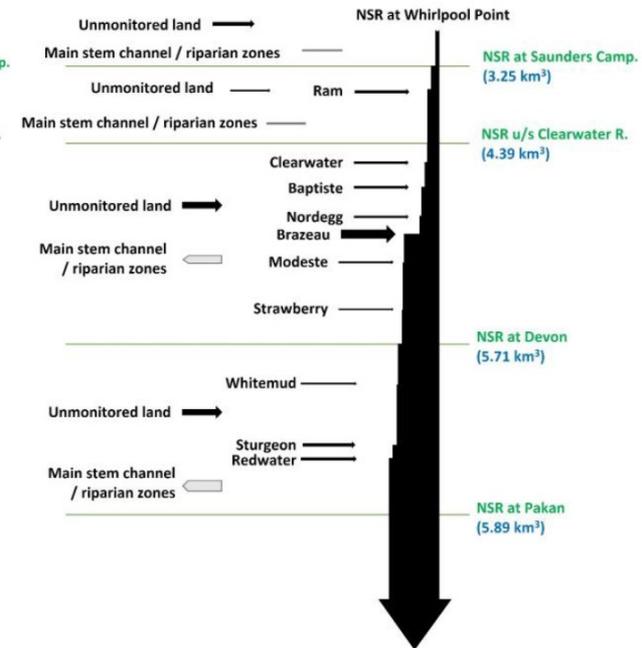
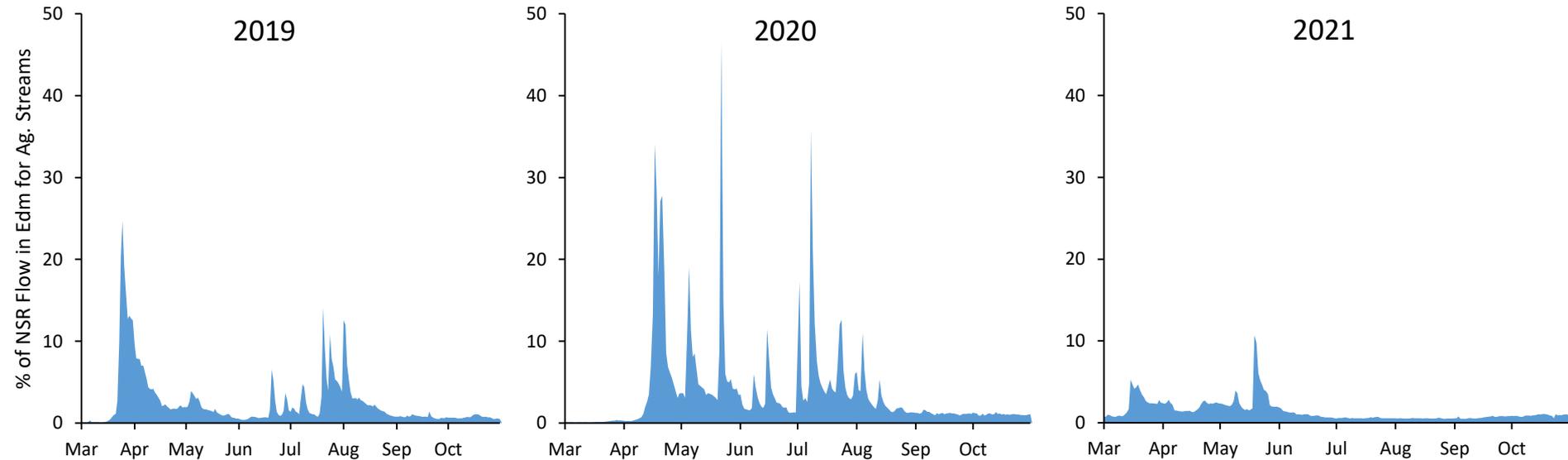


Image Source: GOA

Timing of Flows/Loads is Critical



How do we Define River Health?

- “River Health” is a complex question
- What parameters do we use to define health?
- How do current conditions compare to the pre-disturbance state?
- At what point does a change become unhealthy?
- Management and mitigation of risks
- No further degradation



Current Knowledge and Understanding

- Improved knowledge of non-point sources, temporally and spatially.
- What are the drivers of colour/DOC loading? What is the linkage between land use, land cover, precipitation and loads?
- How will future changes to climate and land use affect water quality and quantity?



Next Steps

- Continued monitoring
- Continued collaboration
- Modelling
- Improved understanding drivers of loads and predicting impacts of future change



Questions?

