WaterSMART Drought Simulation Workshop



The Oldman River Reservoir during a drawdown event where water levels have been lowered to meet downstream water needs. Photo © C. Bradley

In June 2022, I attended a drought simulation workshop hosted by WaterSMART which focused on predicted future drought scenarios in the South Saskatchewan River Basin. The intent of this workshop was to assess current drought mitigation processes and identify gaps in plans, policy, and legislation that can inform the development of the Alberta Environment and Parks' Drought Response Plan. The workshop included participants from various sectors including government, industry, municipalities, and environmental nongovernmental organizations (ENGOs).

While participating in the drought simulation exercises, it became increasingly obvious how inadequate Alberta's water allocation system is for meeting both human and environmental needs, especially during times of water crisis. Water licences (and therefore water rights) are governed by the "first in time, first in right" (FITFIR) principle, which means that in times of water scarcity, the licences issued furthest back in time have priority over newer licences.

Irrigation Districts (IDs) in Alberta own many of the oldest and the largest-

volume water licences issued by the Alberta Government under the Water Act. FITFIR means that the IDs have priority over the use of the water allocated under their licences, to the detriment of the public (i.e. drinking water) or environmental needs. In times of severe drought, Albertans have to rely on the goodwill of IDs to ensure that we are supplied with adequate drinking water. The drought simulation workshop only highlighted this issue of prioritization among water users, as drinking water and ecosystem needs are superseded by irrigators who have held many of their licences since the inception of the Water Act. We need a more equitable process to reallocate water for the wellbeing of people and the environment to avoid situations where water is hoarded for the production of high-value crops such as potatoes and soybeans.

The workshop simulated three Watershed Planning and Advisory Councils (WPACs) for the Oldman, Bow, and Red Deer River sub-basins. The simulated WPACs were composed of members from the various sectors, and as the drought scenario progressed, we were asked to deliberate amongst ourselves to determine what actions might help mitigate water scarcity in our basin and determine next steps. As representatives of the ENGO community, we have no jurisdiction over water allocation and there are no regulatory levers available for us to use to demand the retention of water for in-stream needs during dry years. ENGOs do not hold water licences, so the only action we could take during this exercise was to constantly remind other stakeholders about aquatic ecosystem (i.e. in-stream flow) needs at every step in the simulation. Environmental interests are left hoping that others will listen and act accordingly on the information we provide.

Alberta has established Water Conservation Objectives (WCOs) in only a handful of our sub-basins, which are intended to serve as a guide for the protection of natural water bodies and their aquatic environments. These objectives provide flow targets for the volume and quality of the water needed to remain in-stream to ensure the health of aquatic ecosystems. In the sub-basins where WCOs have been established, they provide a target quantity and/or quality for water conservation that we should be achieving, but evidence shows that we rarely do. A recent report on water law in Alberta published by the Environmental Law Centre has noted that we could license water allocation specifically for the purpose of meeting WCOs, but this would require the political will to do so, and could only function in basins that are not already over-allocated.

Participation in this workshop was valuable to gain a better understanding of how things might play out in reality under a multi-year drought scenario. Given the potential for more frequent droughts as a result of climate change, the Government of Alberta needs to reconsider how water rights are being managed in our province. What happens when our reservoirs dry up? How do we get more water back into our rivers to meet ecosystem needs if/when we are struggling to meet basic human survival needs for drinking water? The FITFIR principle cannot achieve equitable outcomes for all water users when the licensing system is inherently biased towards earlier licences. In times of water scarcity, such as those predicted due to climate change, we need a more adaptable system for water management, and proactivity will be essential. Our currently legislated system of licensed diversions is not adaptable in the face of changing environmental conditions. We should be managing our water to ensure supply, not allocation.

- By Phillip Meintzer