

The background is a collage of several photographs of a mountain landscape. The largest photo shows a turquoise lake at the base of a steep, rocky mountain with patches of snow and dense evergreen forests. Other smaller hexagonal photos show different views of the mountains and sky.

SSRB WMP 10 Year Review

Mike Murray

Introduction to Project



- Approved Water Management Plan for the SSRB (2006)
 - Result of extensive stakeholder consultation
 - Intended to address current allocation and withdrawal issues in the South Saskatchewan River Basin
- WPACs initiated the review due to interest in determining how plan is working. Are there gaps that need to be resolved, what may need more attention.
- It is intended that a number of recommendations can be addressed in the short term.



Principal Recommendations (SSRB Phase II WMP 2006)

- AENV to no longer accept applications for new surface water license allocation in the Bow, Oldman, and South Saskatchewan River sub-basins
- Minister of Environment can through Crown reservation determine how water not currently allocated is to be used
- When allocations in the Red Deer Sub-basin reaches 550,000 cubic decametres a thorough review be conducted to identify the maximum allocation limit



Other Recommendations and Provisions (SSRB Phase II 2006)

- Interbasin Water Coordinating Committee to be formed to provide water management coordination recommendations (include WPAC membership)
- Establish Water Conservation Objectives for Bow, Oldman, SSR for applications received after May 1, 2005 (45% of natural rate of flow or existing instream objective plus 10% whichever is greater) – Red Deer 45% or 16 cms whichever is greater
- 10% holdback may be applied to transfer of license



Recommendations Continued

- Director to consider matters and factors in making decision on licenses and transfers
- Continue to work on efficiency, effectiveness, productivity of water use
- Create water market for transfers
- WPACs to consider planning priorities in their watersheds and undertake future planning with this plan as a foundation



Project Scope (WPAC 2017-18 Review)



- 10 years has passed since implementation of the plan was felt to occurred. A general review of the plan was felt to be appropriate to assess its implementation, identify challenges and trends that can inform discussions of current issues, and suggest next steps.
- This is not a required or approval-related review. This is a WPAC conducted review which in fact was called for in the approved plan.
- The review does not open the approved plan or the Water Act for revision – rather, the intent is to identify where further attention or effort is required.

focusing on the following specific recommendations in the 2006 Plan:

- The limit on water allocation from the Bow, Oldman and South Saskatchewan River sub-basins
- Future water allocation limit in the Red Deer River sub-basin
- Recommended Water Conservation Objectives (WCCOs)



Scope continued

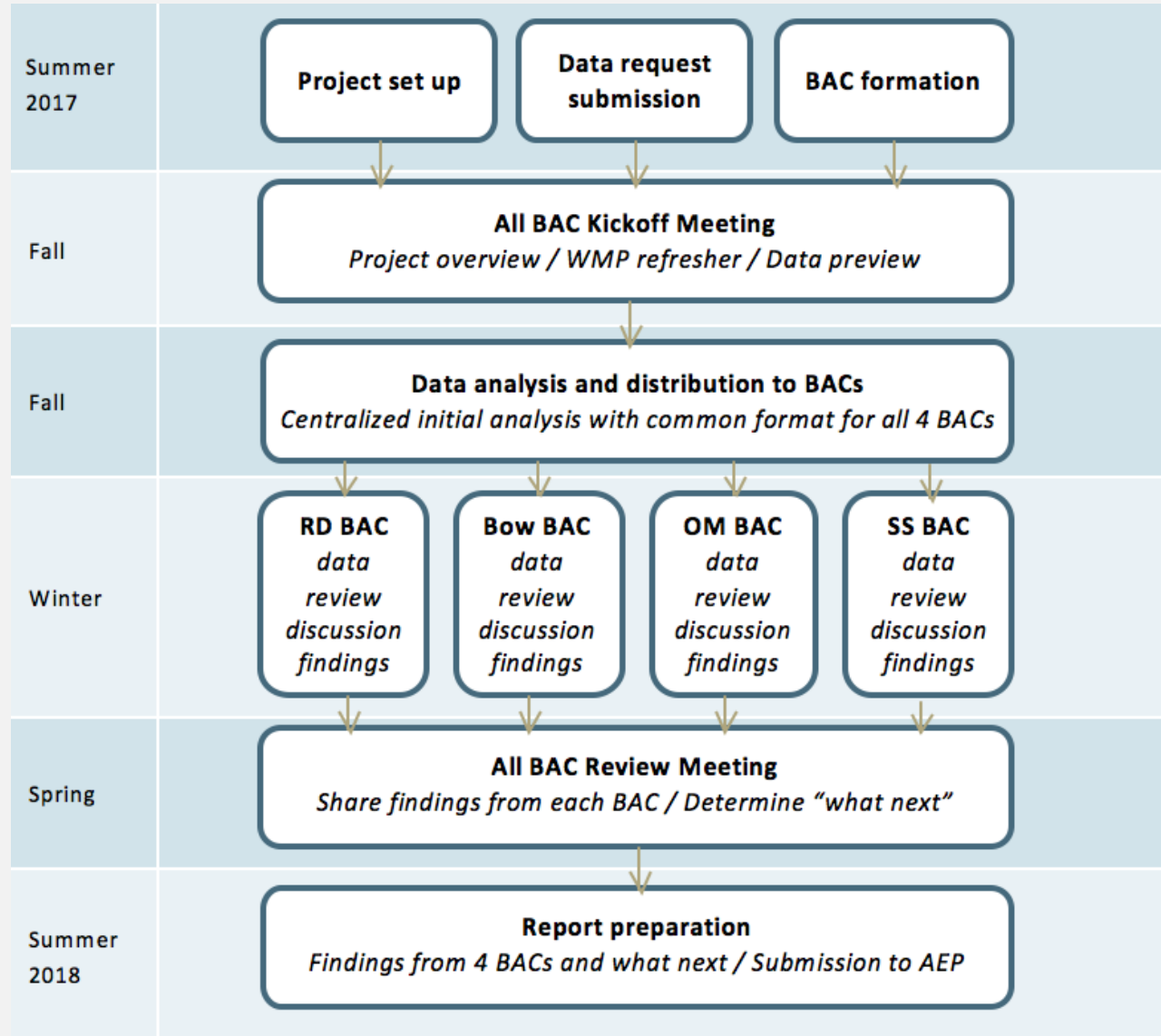
- Establishment of an Interbasin Water Coordinating Committee (IWCC)
- Use of water allocation transfers, water conservation holdbacks and factors that must be considered when making decisions
- Water management strategies

Out of Scope

- Water quality. While Phase Two included a review of the river flows required for protection of the aquatic environment (to assist in establishing WCOs), water quality was not a specific component of the Plan itself.
- Groundwater (except for subsurface water that is identified as hydraulically connected to a water body [river, stream, lake, etc]).
- *Master Agreement on Apportionment* (1969)
- Repeal of the South Saskatchewan Basin Water Allocation Regulation (1991)
- Suggested changes to the *Water Act*
- Climate change



Project Timeline



4 Basin Advisory Committees

- Red Deer - Co-Chairs: Dale Christian, Anna Lewis
- Bow River -Chair: Steve Meadows
- Oldman - Chair: Janna Casson
- SEAWA -Chair Patrick Jablkowski
- Report Writer - Andrea Czarnecki
- WaterSMART - Megan Van Ham, Harris Switzman
 - data, analysis, facilitation, summary documentation



List of BAC members

Oldman BAC

Cheryl Bradley, Alan Harold, Doug Kaupp, Dwayne Rogness, Henk De Vlieger, John Younger, Lori Goater, Shannon Frank, Terence Hochstein, Shirley Pickering, Brian Hills

Bow BAC

Steve Meadows, Richard Phillips, Roger Drury, Judy Stewart, Shirley Pickering, Harpreet Sandhu, Rob Wolfe, Mike Murray, Mark Bennett, Mike Kelly, David Barrett

Red Deer BAC

Jeff Hanger, Rosemarie Ferjuc, Bill Shaw, Brandon Leask, Dale Christian, Doug Thompson, Jordon Christianson, Kent Dyck, Phil Boehme, Chris Israelson, JoAnne Volk, Keith Ryder, Pat Churchill, Warren Robb, Christine Campbell, Natasha Wright, Anna Lewis

SEAWA BAC

Marilou Montemayor, John Michalopolous, Larry Leipert, Ryan Hornung, Kennedy Fandrick, Amy Moore

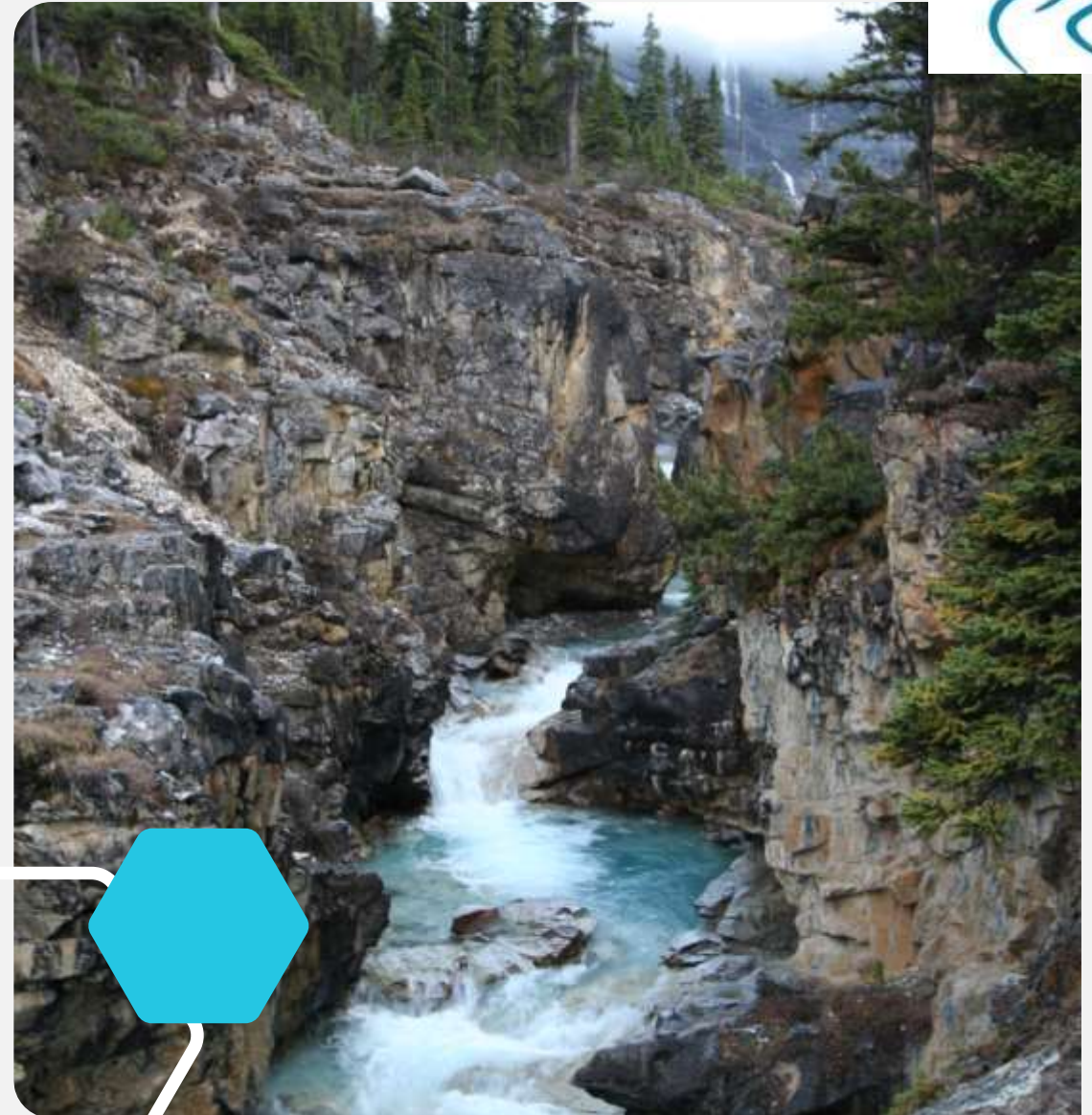


The Necessity for a Water Management Plan

“The SSRB must move into a new era of water conservation, efficiency and effectiveness where the large amount of water that is already allocated is managed and used to meet the needs of both the aquatic ecosystem and communities. This plan starts the movement into this new era.”

Let those who work for the rivers, conserve the rivers

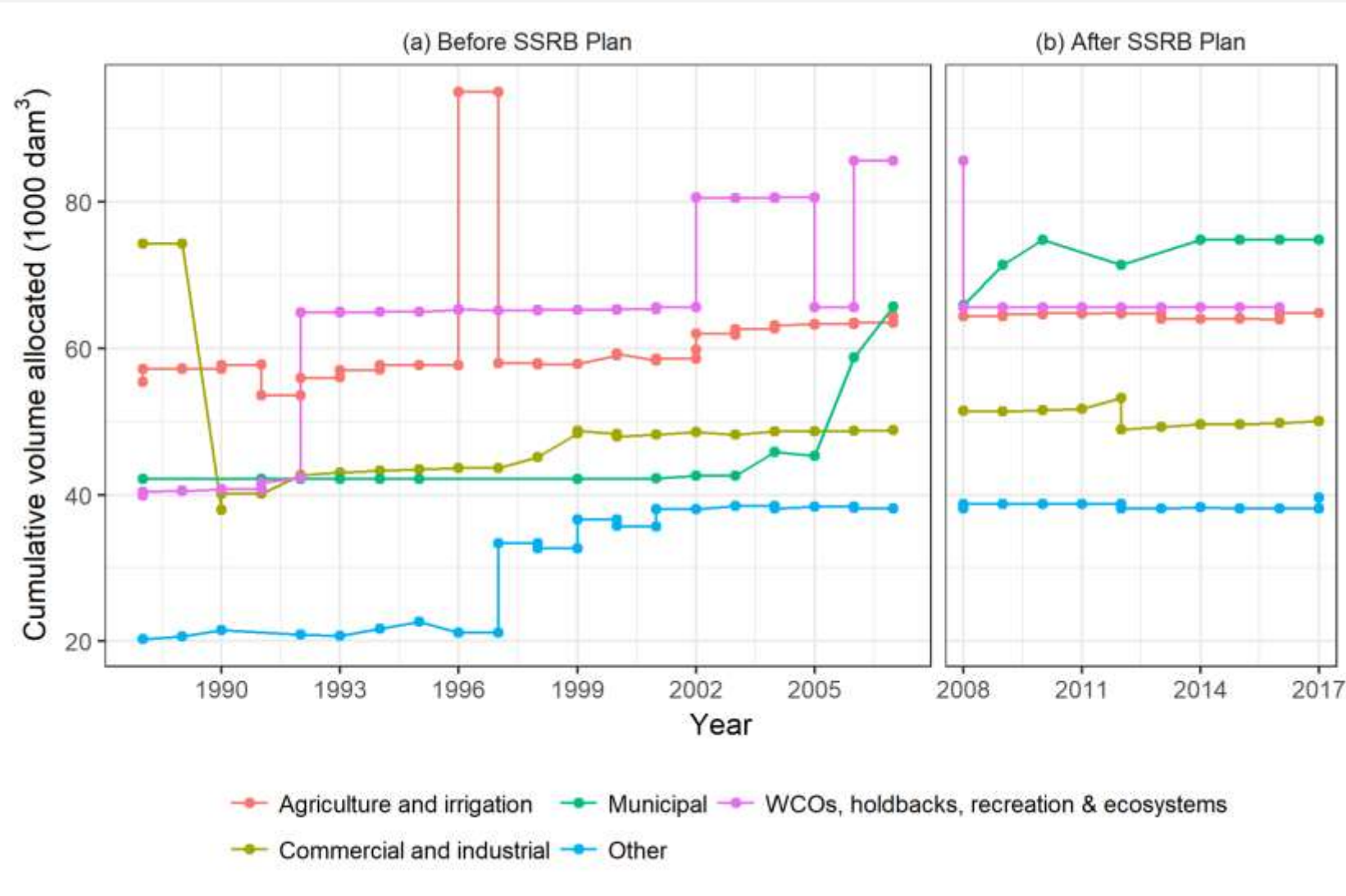
- WPACs are the best place to conduct these types of projects
- Members are knowledgeable, experts, and interested in participating
- Always something new to learn through discussion
- A lot of material to go through with spectrum of perspectives but also....fun!



Visual Data

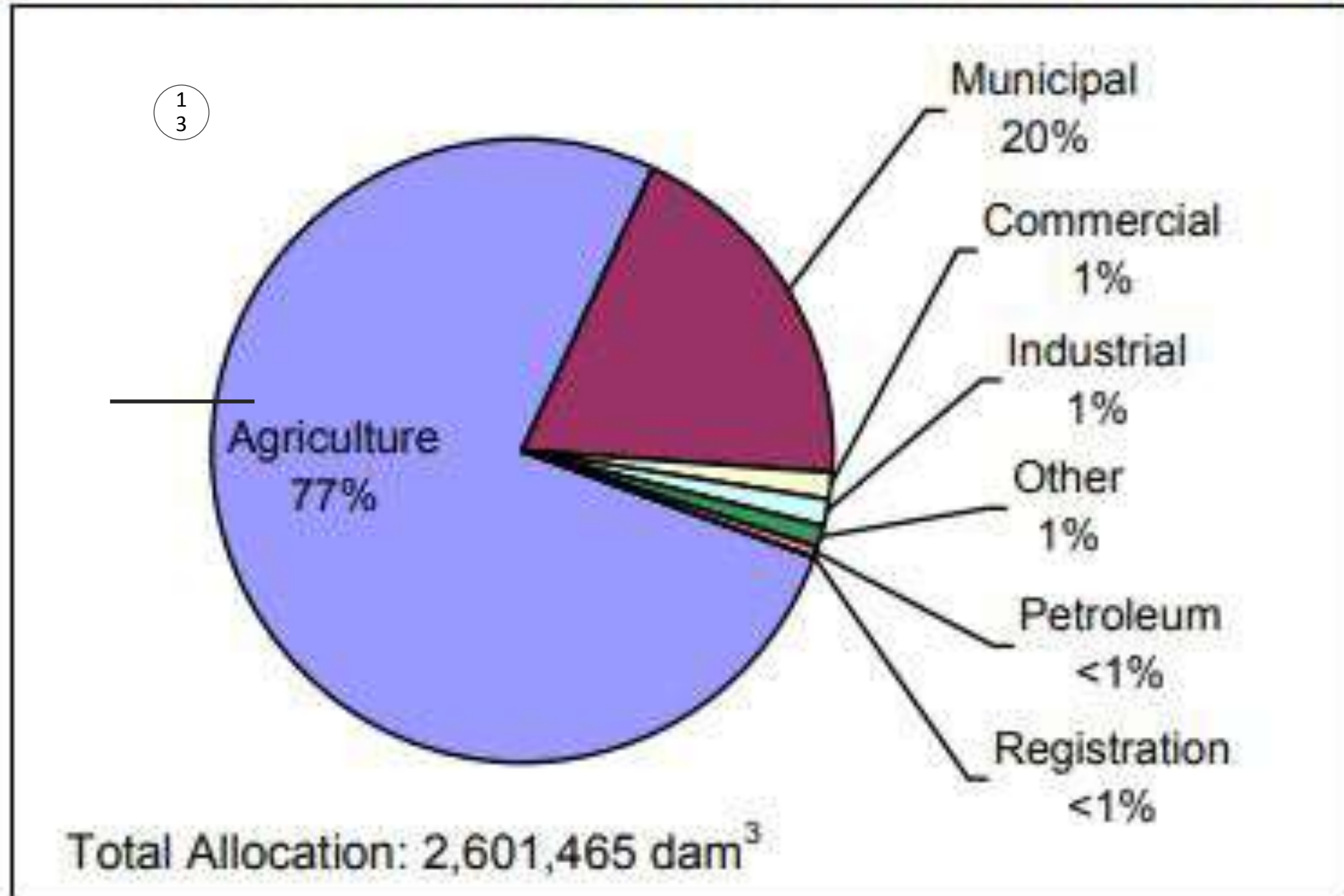


How has the trend in surface water allocation and/or use changed in the years before and since the implementation?



- Trends become steadier and linear
- Volume allocated decreased overall

Figure 5-1 Distribution of Active Water Allocations in the Bow Basin



The background is a scenic landscape of a calm lake reflecting a forested mountain range. Several hexagonal overlays are present: a large light pink one at the top center, a smaller one to its left showing a mountain peak, and several dark grey ones on the left side, some containing landscape images. A large dark grey rectangle on the right contains the title text.

Report Findings of the Sub- basins

Bow River Basin Advisory Committee



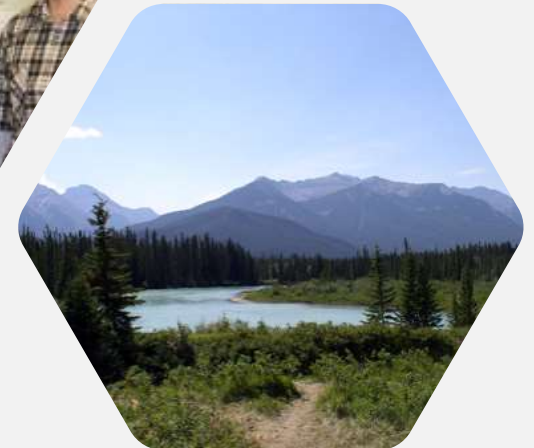
Key Findings

- Backlog of license applications close to clearing.
- Temporary Diversion Licence (TDL) volume is small in the Bow Basin and has shown little increase since closure.
- Small steady increase in groundwater allocations
- 57 transfers have occurred in the bow
 - 2/3 going to Municipalities
- 10% holdbacks taken for the most part



Bow BAC Key Findings Continued

- All approved water allocations and transfers are publicly listed in the AEP Water Allocation Licence Viewer.
- WCOs and holdback won't restore river flows in the short term
- The greatest increase to water kept in river is currently from license holders' conservation and efficiency efforts (i.e., irrigation efficiency).
- AEP updates the Water Resources Management Model when possible (e.g., updates the historical flow and licence data); however, more still needs to be done.



Oldman River Basin Advisory Council



Key Findings

- The surface water allocation and issuing approved license trend in the Oldman watershed has increased (1.5%) since 2008
- Groundwater allocations have increased slightly
- 151 transfers have occurred in the Oldman
 - 53% Agriculture-Irrigation swaps
 - 46% Municipalities
- 8 of the 151 transfers in the Oldman did not take a 10% holdbacks and about 5.7% was held back
- Backlog of 48 license applications
- Temporary diversion licence (TDL) use is minimal in the Oldman basin



Oldman BAC Key Findings Continued

- Surface water licenses increased since 2008
- Crown Licenses established – Pine Coulee and Little Bow – 71 WCO licenses allocating hold back volumes
- WCOs won't restore river flows in the short term (other tools needed)
- Greatest benefit to the river is from license holder conservation and efficiency efforts (e.g. over 200 million m³ conserved annually by the irrigation districts)
- Lack of clear guidelines for applicants in determining if their water source is from groundwater or groundwater that is directly connected to surface water.



Oldman BAC Key Findings Continued

- No systematic approach to evaluating what licenses are “in good standing” prior to entering the application process.
- Water transfer process should have more clarity, transparency and efficiency overall and this was one of the key messages of the Water Allocation Transfer System Upgrade Project (WATSUP) report
- Cumulative effects and climate change need to be considered and modelled in the Oldman basin.
- AEP Groundwater Policy Branch should develop a timeline for development of policy guidance



Red Deer River Basin Advisory Committee



Key Findings

- The Red Deer Basin Advisory Committee currently estimates it will take 30 years to reach the 550,000 dam³ limit
- Combined factors have the potential to accelerate pressures within the watershed
- Only the large users are currently reporting water quantity use – usage is self-reported and return is also reported
- The WCO only looks at main stream and not tributaries
- The transfer system has only been used twice since the 2006 plan



Red Deer BAC Key Findings Continued

- Most of the recommendations have been met, but there are a number of data/knowledge gaps
- Consistently met obligations under the agreement with Saskatchewan
- Basin has a growing population, increasing industry and agricultural demands; largest growth within the Highway 2 corridor
- Interbasin transfers, private water use, tributaries and return flows are key areas where there are gaps in our knowledge
- The IWCC has been meeting, the last decade has not stress tested the plan
- Water quantity is rarely linked to water quality



Red Deer BAC Key Findings Continued

- Holdbacks aren't necessarily that effective; Licences have to be transferred multiple times
- Innovations and improvements in water licensing and legislation to better match allocations with needs is not an issue in this basin



South Saskatchewan (sub-basin) River Basin Advisory Committee



Key Findings

- The rate of increase in 'Interim' and 'Full' groundwater allocations appears to follow a similar, or slightly lower rate compared to the allocated surface water
- The proportion of allocated volume that is withdrawn, utilized or returned by individual licence holders was identified as a data gap
- Adaptation by irrigators, municipalities, and industry within the South Saskatchewan sub-basin has increased water use efficiency
- Relatively few crown licences have been issued within the SSR sub-basin



SEAWA BAC Key Findings Continued

- Following implementation of the approved plan, Water Conservation Objectives (WCOs) are not a significant proportion of allocated flow volume within the SSA sub-basin
- The Interbasin Water Coordinating Committee (IWCC) reports are provided as to projections of water supply to the participating stakeholders
- Municipal allocations are by far the largest allocation in the South Saskatchewan Sub Basin
- The 10% holdback appears not to be applied across all transfers within the SSA sub-basin



Transfers within the SSR

Transfer From	Transfer To	Volume Transferred (dam3)	Volume Held Back (dam3)
Irrigation (Crop (Grain))	Irrigation (Crop (Grain))	810487.3	73494.7
Irrigation (Crop (Grain))	Agricultural (Stockwatering)	20105	0
Irrigation (Crop (Grain))	Municipal (Single-Multi-Homes/Farmsteads (not subdivision))	296667	32963
Municipal (Single-Multi-Homes/Farmsteads (not subdivision))	Municipal (Village/Summer Village/Town/Hamlet/City)	704938	0
Municipal (Village/Summer Village/Town/Hamlet/City)	Municipal (Village/Summer Village/Town/Hamlet/City)	118071	0
Municipal (Subdivisions (Rural))	Municipal (Village/Summer Village/Town/Hamlet/City)	8445	0
	Total	1958713.3	106457.7

Emerging Themes

- Many of the plans recommendations have been implemented
- More complex and open ended aspects require a more in-depth review
 - WCO, Holdback and allocation limits appear to have reduced the risk of further degradation of the aquatic environment and significant gains in conservation have been made but.....more needs to be done
 - Ability to assess plan and policies requires long-term resource commitments in data collection and exchange, monitoring, modeling an evaluation. Linkage needed to cumulative effects



Emerging themes continued...

- With the intent to inform and improve water management in the SSRB, BACs identified many opportunities for all stakeholders:
 - Continue to involve collaborative groups in watershed management
 - Provide clarity, transparency and information on decision making processes implemented through the plan
 - Implement programs and actions beyond the plan that will not only prevent further degradation, but improve the long-term health of the aquatic environment.
 - Provide the resources necessary to continually work towards filling critical gaps in information about watershed management
 - Provide the resources necessary to continually develop the monitoring and modeling capability and capacity in the SSRB



Recommendations

- Conduct a case study for applying the matters and factors in the SSRB WMP
- Hold a workshop with Alberta Environment and Parks and WPACs to prioritize opportunities to improve aquatic health
- Collate and provide data in a meaningful way to understand the state of the health of the SSRB and the opportunities to restore it where it is degraded
- Revitalize the Interbasin Water Coordinating Committee by augmenting its purpose and role through the development of an updated terms of reference



Final Notes

This projects marks the beginning of new and improved ways of thinking about water conservation management


Takeaways


- Water management plans are a must for the future of Alberta's water bodies
- WAPC's know their basins inside and out and have collaborative conservation methods as their visions
- They are able to pull together the necessary information – such as key findings and recommendations based on their basin's needs – to kickstart, see through, and continue a major project
- They are able to collaborate with stakeholders and major governmental organizations
- **WPAC's across Alberta can, should, and will play a crucial role in future water management planning**






Thank You

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