Trout Unlimited Canada:
Fisheries and aquatic needs during times of water shortage

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Trout Unlimited Canada

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Who We Are

- Volunteer-based chapters across Canada
- Professional staff in Calgary and Guelph
- Broad base of members, supporters, and partners

Our Priorities

- Water Quality
- Water Quantity
- Aquatic Communities
- Aquatic Habitat

Fish needs

- Fish need water, so does everything else
- Fish also need:
  - Appropriate stream temperature and water quality
  - Food
  - Cover from predators
  - Connection - to different habitat types, other individuals

Drought

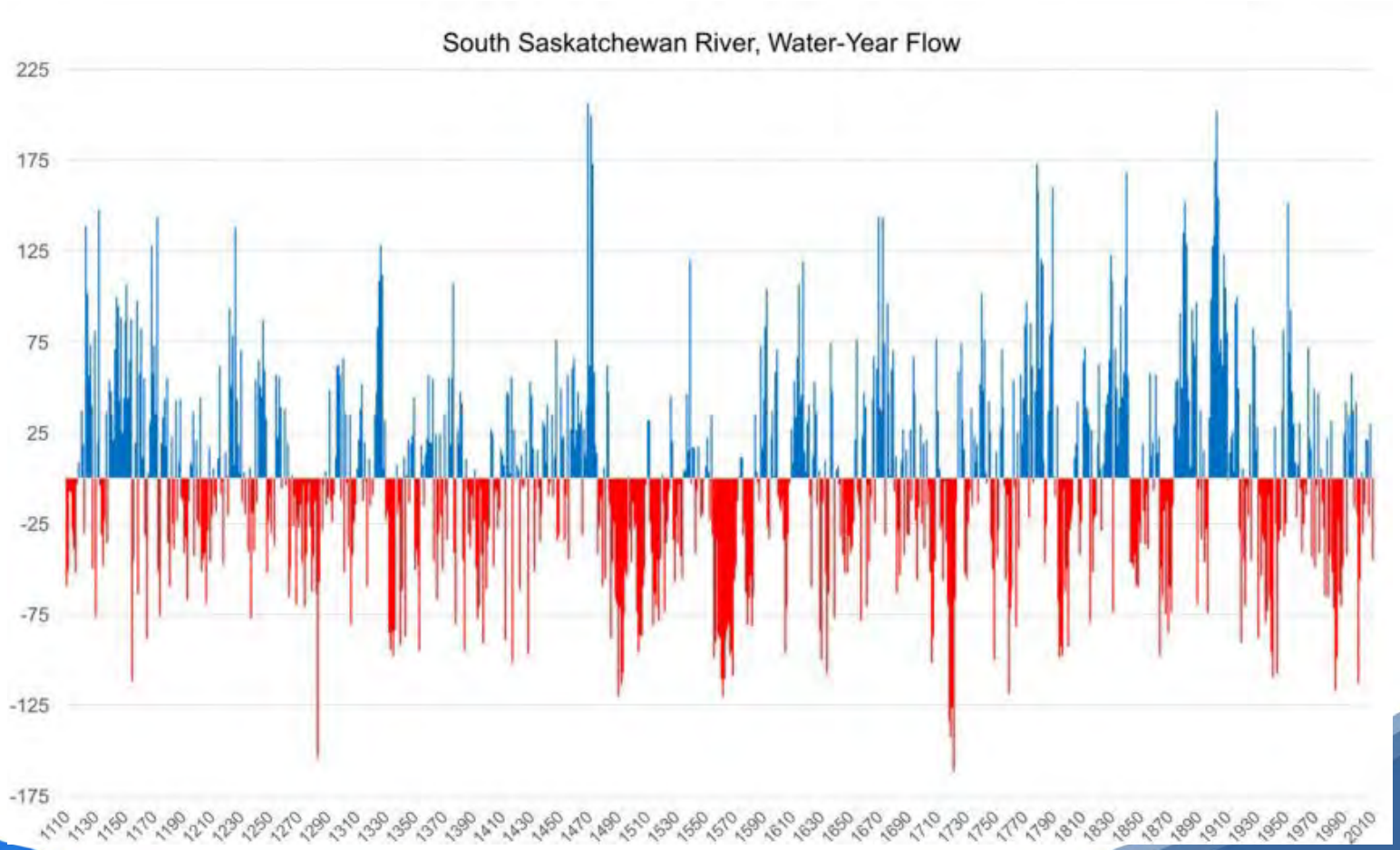
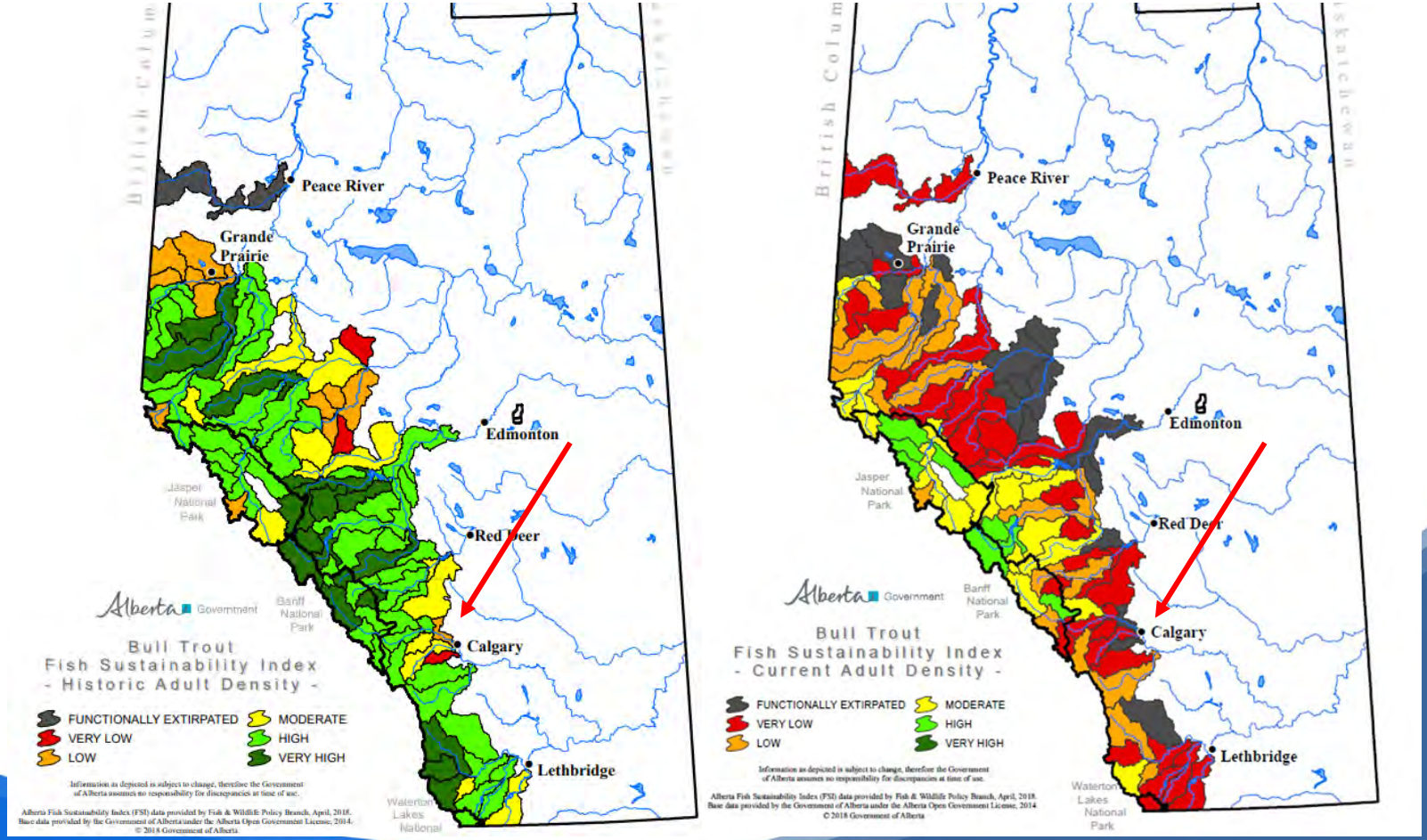


Figure 1: Change on mean water flows for the North and South Saskatchewan Rivers for the years 1110-2010. Source: Sauchyn, D. & Ilich, N, 2017, Nine Hundred Years of Weekly Streamflows: Stochastic Downscaling of Ensemble Tree-Ring Reconstructions. Water Resources Research, Volume: 53, Issue: 11, Pages: 9266-9283. DOI: 10.1002/2017WR021585.

So…we're good?

Native Trout Recovery: Bull Trout



Native Trout: Threats

Natural Limitations
Temperature
Other

Water Quality
Phosphorous
Sedimentation

Direct Mortality
Angling
Entrainment
Research & monitoring
Pathogens
Natural

Bull Trout
Adult Status

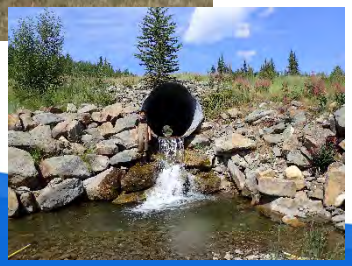
Water Quantity
Water withdrawal – summer
Water withdrawal - winter

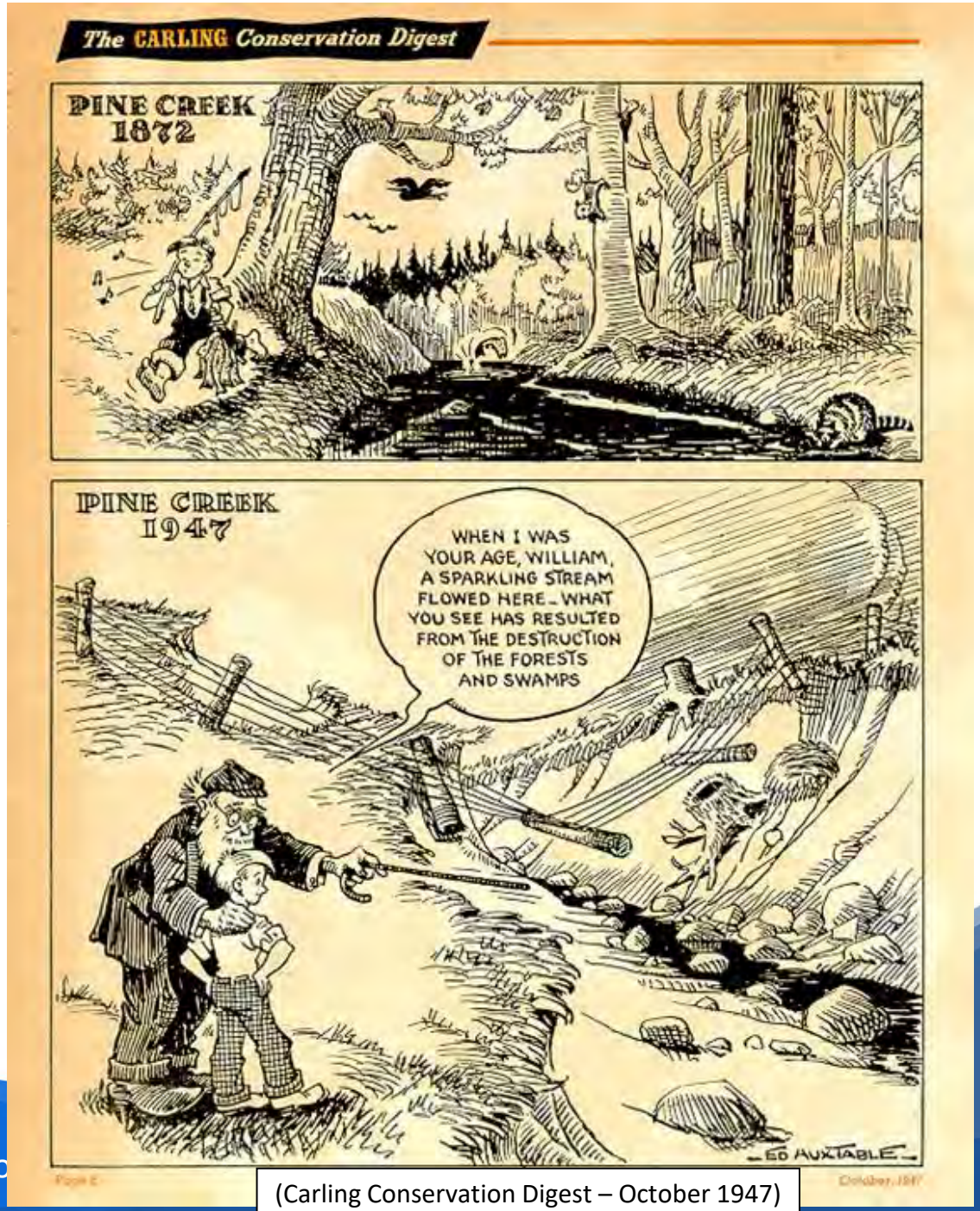
Fragmentation
Road crossings
Large barrier dams

Water Flow
Modifications to frequency and timing of peak flow events

Competition

Hybridization





(Carling Conservation Digest – October 1947)

Drought – what to expect in 2024

Lesley's predictions:

- River flows will be low
- Some streams will dry up
- Fish will become stranded – some will die
- You will be asked to reduce your water use
- Angling restrictions
- Wildfire
- …and lots of different "solutions" to address water shortages

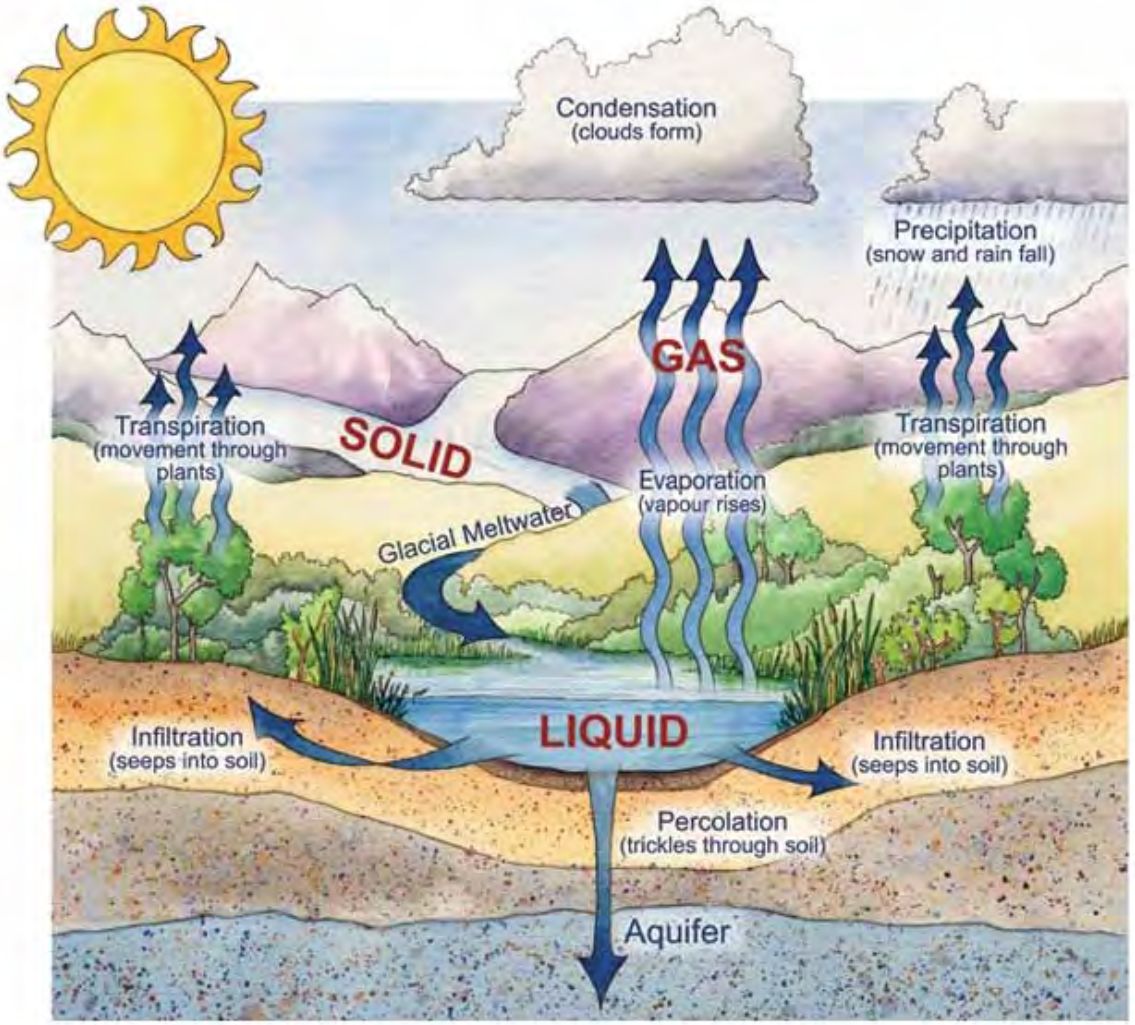
Resilience

- Definition: The capacity to withstand or to recover quickly from difficulties

- Drought and flood WILL happen again. Building resilience in the ecosystem will help us prepare for the future

Drought – next time

- We need to start thinking “outside the box” if we are serious about adaptation
- Water come TO our rivers, not FROM our rivers.



Time to Reimagine What our Riverscapes Could Be

- What does a healthy stream look like to you?
- Time to reimagine what our riverscapes could be

What even is normal?

- "We've suffered from a sort of ecological amnesia for over a century now. All the settlement came after the fur trade, and we came into this land thinking it was a certain way. Then, as beavers were reintroduced, people found them difficult to live with because they change the hydrology and landscape.“

- Frances Backhouse (2015)


Reimagine what riverscapes could be!
Mark Beardsley


Deeply incised banks
“Bowling alley” channel, shallow, no habitat diversity
As the stream “cuts” downward, the water table drops too
No ability to store water

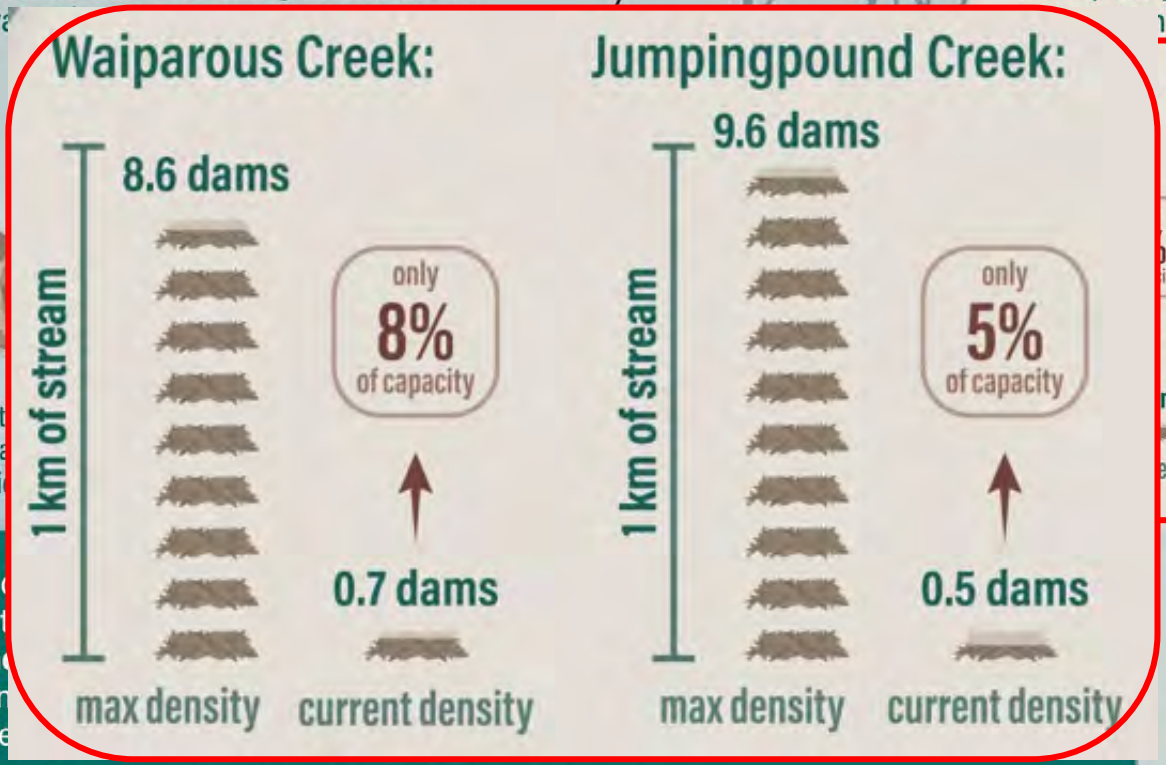
Waiparous Creek Watershed

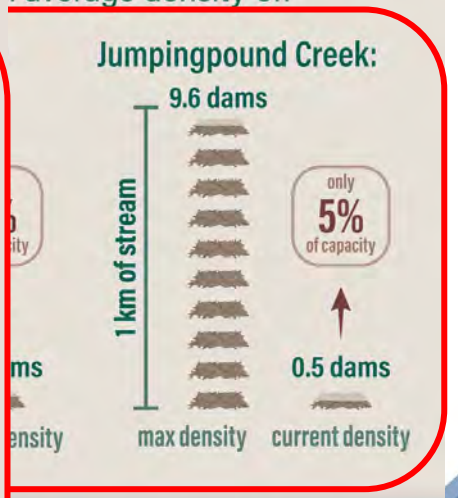
Understanding beaver benefits in the Bow

There is growing appreciation for the role beavers play in watershed health. In the Alberta Foothills region, many anglers and ranchers are becoming interested in beavers as a wa

Ranchers want wat
Beaver dams help ca
for release in the dri

To maximize the benefits of beavers on the landscape, it is key to determine where beavers can build new dams. New research in two headwaters of the Bow River has shown that both stream networks could support many more beaver dams than they currently do. At capacity, the stream networks can
average density of:





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For more information visit: cheriewestbrook.ca

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Alberta Conservation Association

BDA Process

Figure 18 – An example from Goldfarb (2018a) of achieving a self-sustaining condition where meals of beaver dam analogues (BDAs) mimic beaver dam activity, and then the maintenance and expansion of beaver dam activity is taken over by actual beaver, and then they maintain a complex system state. Figure © Science by V. Altounian.

Waiparous Creek Watershed

Beaver dam analogues

- Built: Sept 2022

Spring 2023

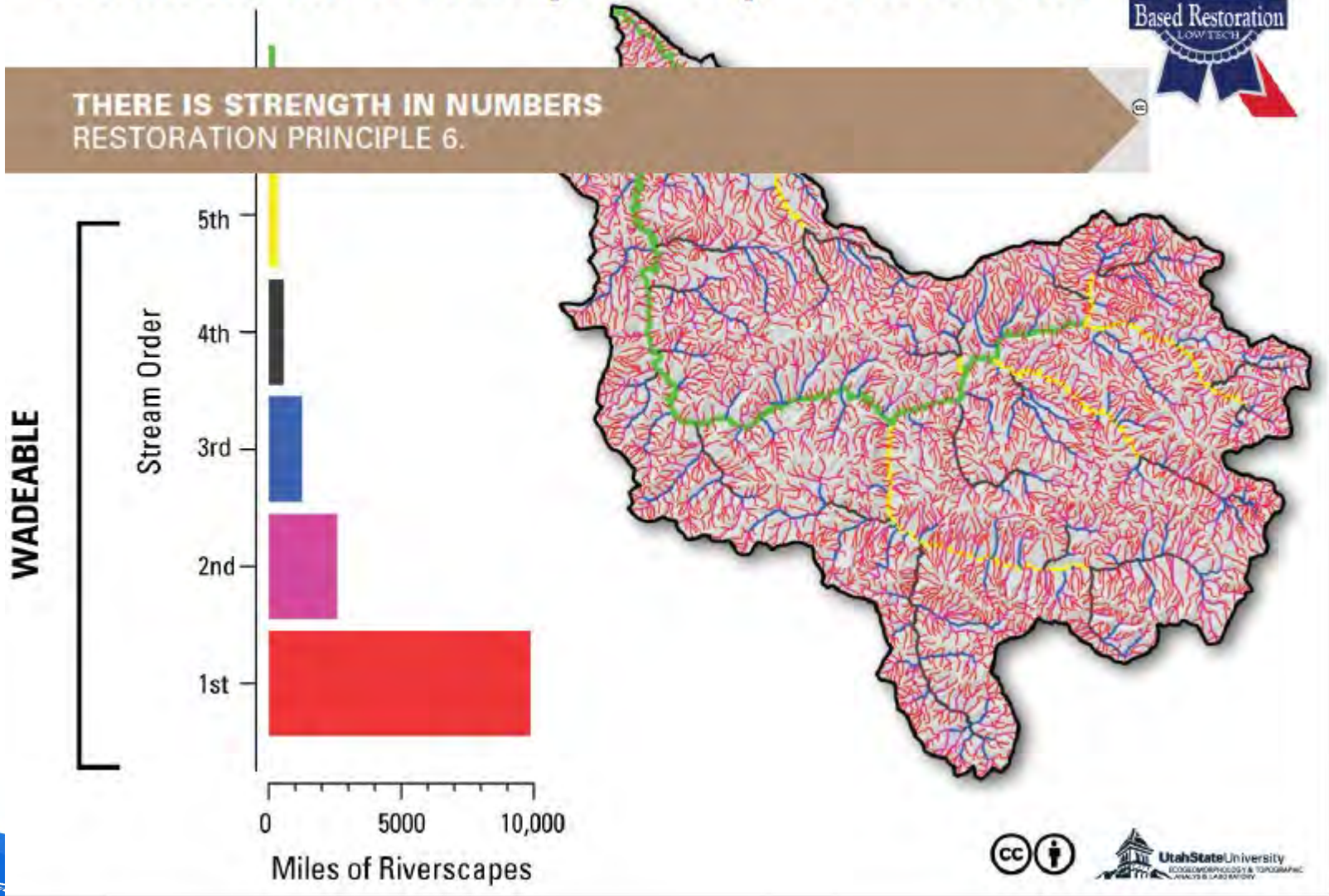
Beaver dam analogues (Sept 2023)

Culvert Replacement

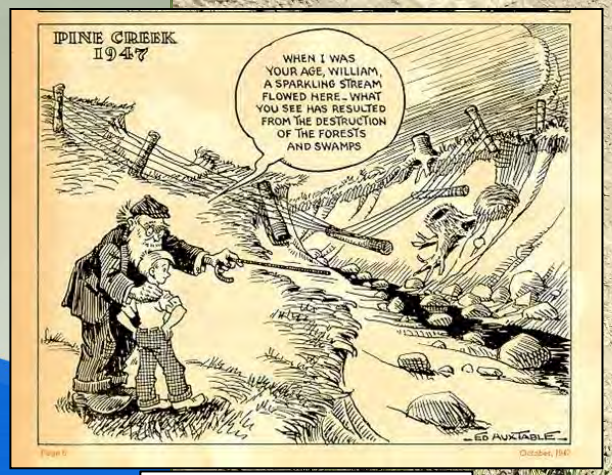
Solution Can Scale Up to Scope of Problem!

Process Based Restoration LOW TECH

THERE IS STRENGTH IN NUMBERS
RESTORATION PRINCIPLE 6.



Lots of real estate out there….



Look familiar?

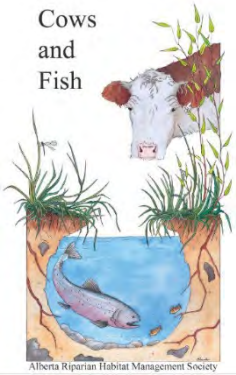
What can you do?

- Reduce your water use - rethink your lawn
- Support, donate, volunteer with organisations that are actively working to restore streams, riparian areas, wetlands
- Tell everyone that will listen that it’s OK to like beavers

PLAINS MIDSTREAM CANADA

CCI

Calgary ATV Riders



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Alberta Conservation Association

Environment Canada | Environnement Canada

CALGARY FOUNDATION
FOR COMMUNITY, FOREVER

Samuel Hanen Society for Resource Conservation

Bow River Basin Council

Fisheries and Oceans Canada | Pêches et Océans Canada

FOREST RESOURCE IMPROVEMENT ASSOCIATION OF ALBERTA (FRIAA)

alberta fish & game association

Land Stewardship Centre

DOWNER

Trout Unlimited CANADA

ALBERTA NATIVE TROUT COLLABORATIVE

Truite Illimitee CANADA

BIG ROCK BREWERY

AIL
THE AIL GROUP OF COMPANIES

SIKSIKAITSITAPI
BLACKFOOT CONFEDERACY

WHISPERING PINES
BIBLE CAMP

SECURE energy services

SLS
Spray Lake Sawmills