

***Water Sustainability Act* Information Session: Groundwater Licensing**

Tina Neale, Greg Tyson
Ministry of Environment

Michele Lepitre
Ministry of Forests, Lands and Natural Resource Operations
May 4, 2016

BC Ground Water Association
Fairmont Chateau Whistler, Whistler, BC

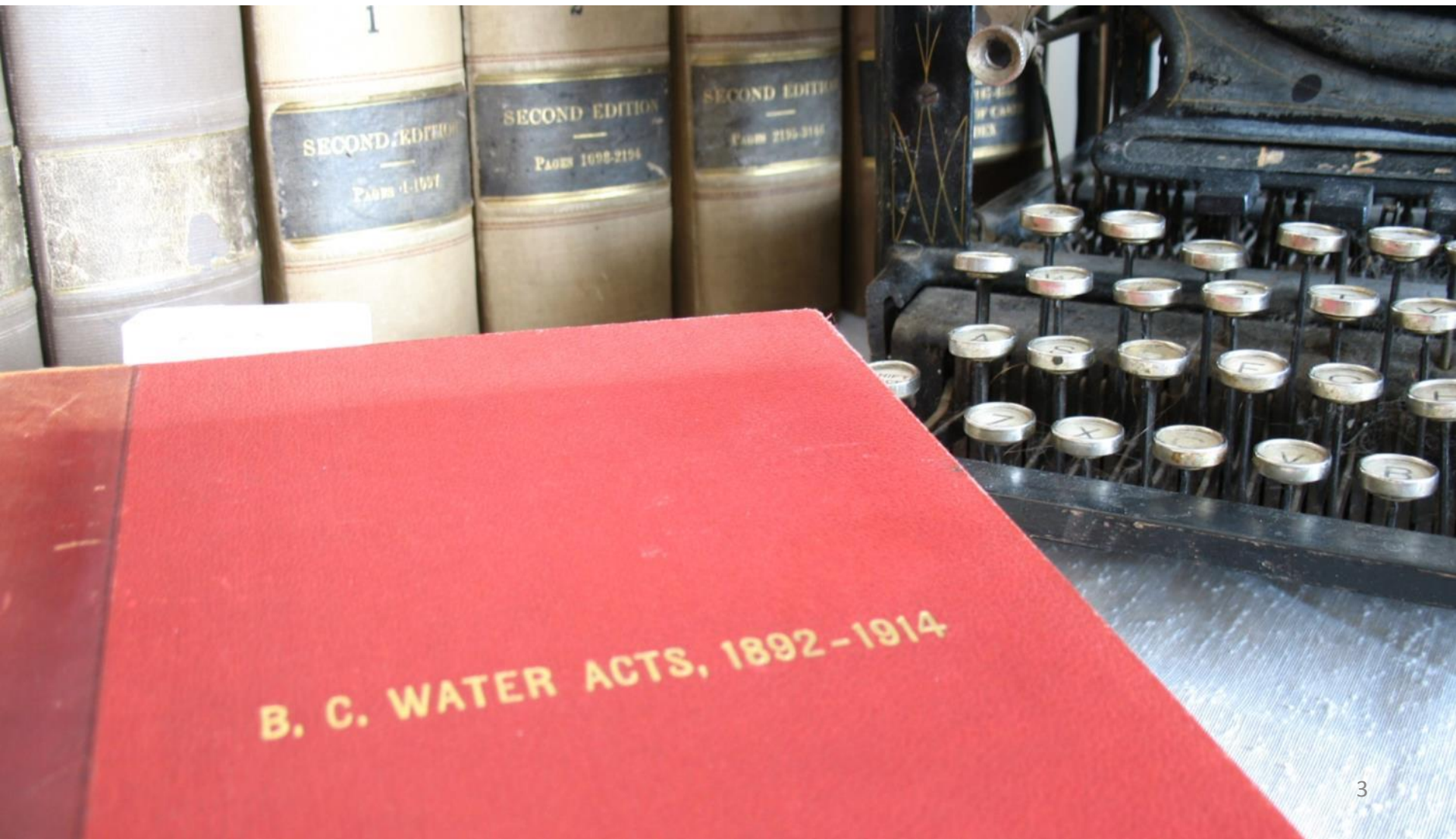


Objectives

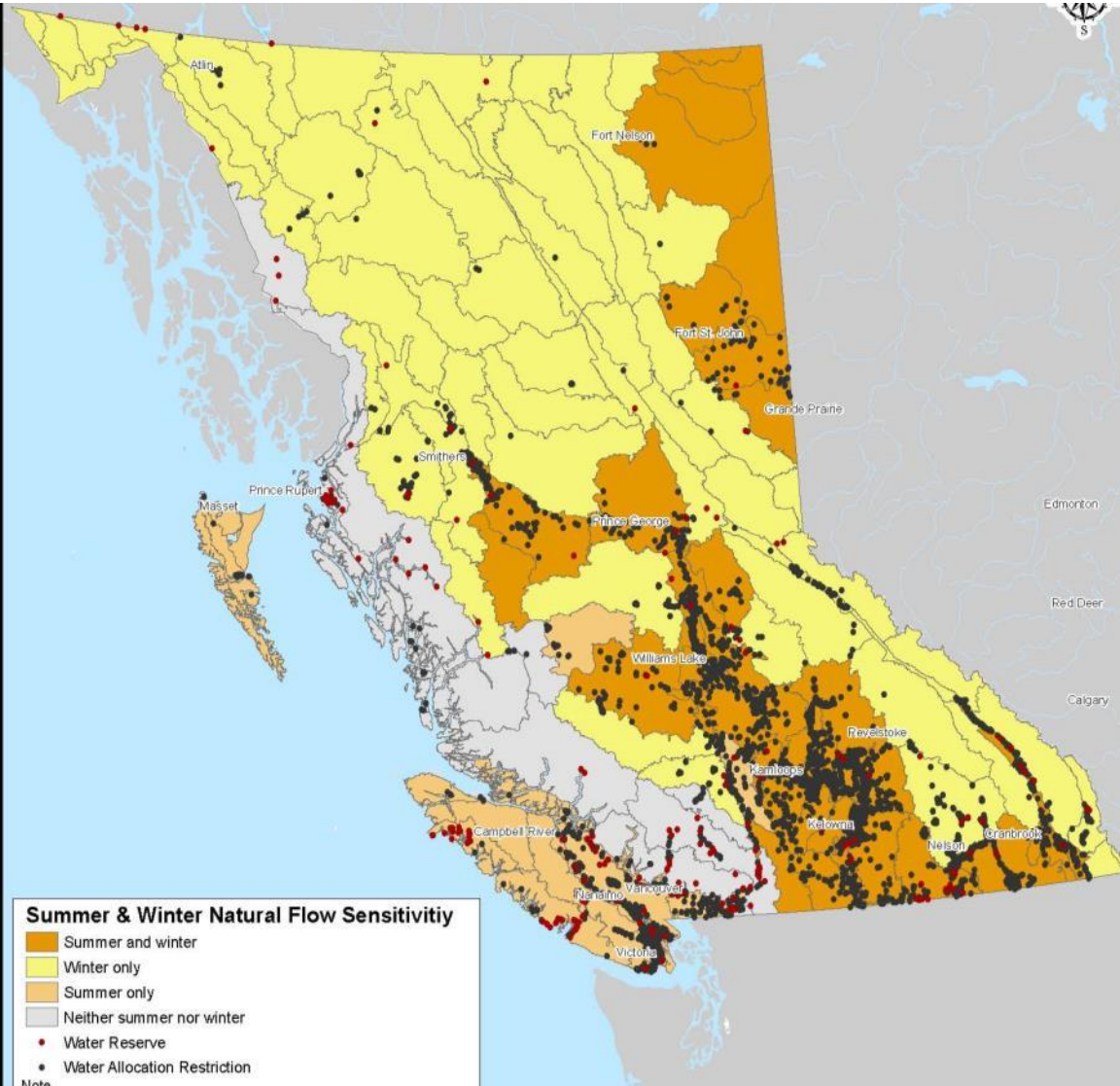
- Understand the water rights framework in the *Water Sustainability Act (WSA)*
- Understand the water user's rights and responsibilities
- Understand application requirements and process for authorizing groundwater use



Background



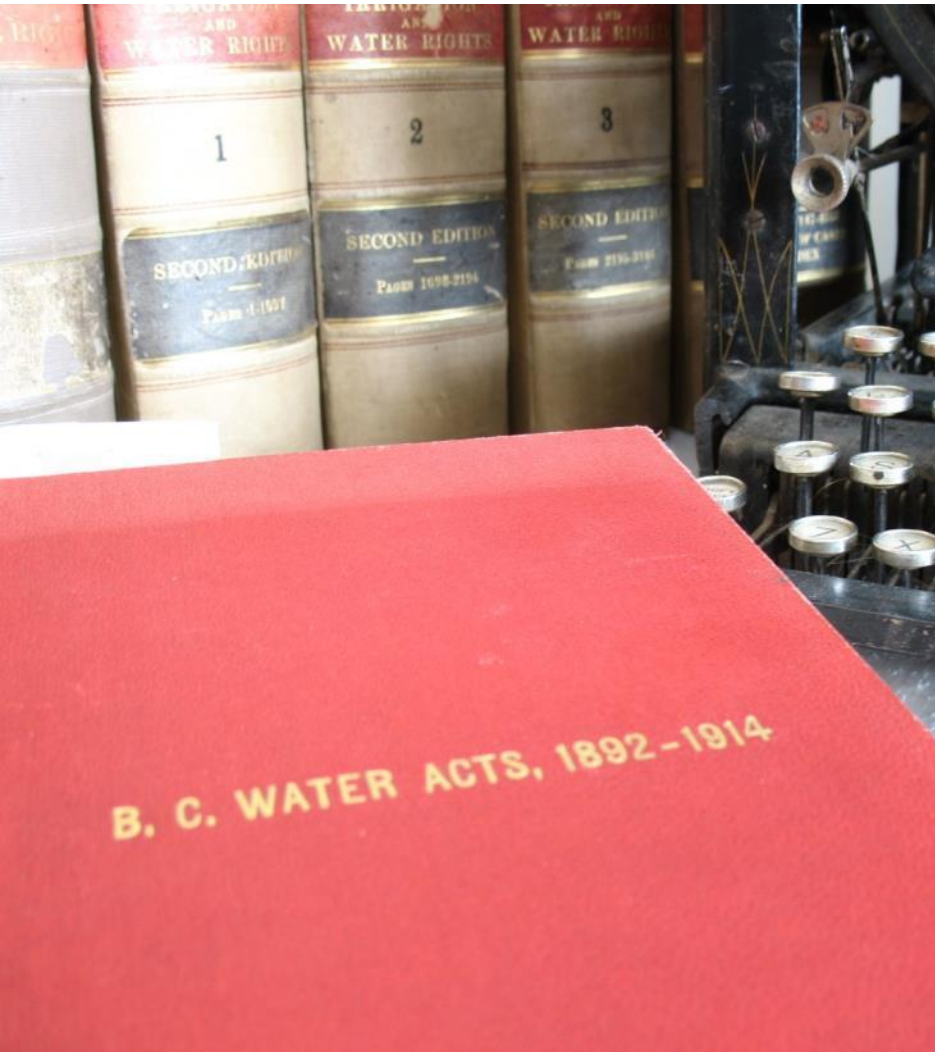
Our water is under pressure...



- Naturally flow sensitive areas
- Population growth
- Urbanization
- Climate change
- Water allocation restrictions
- Competing demands

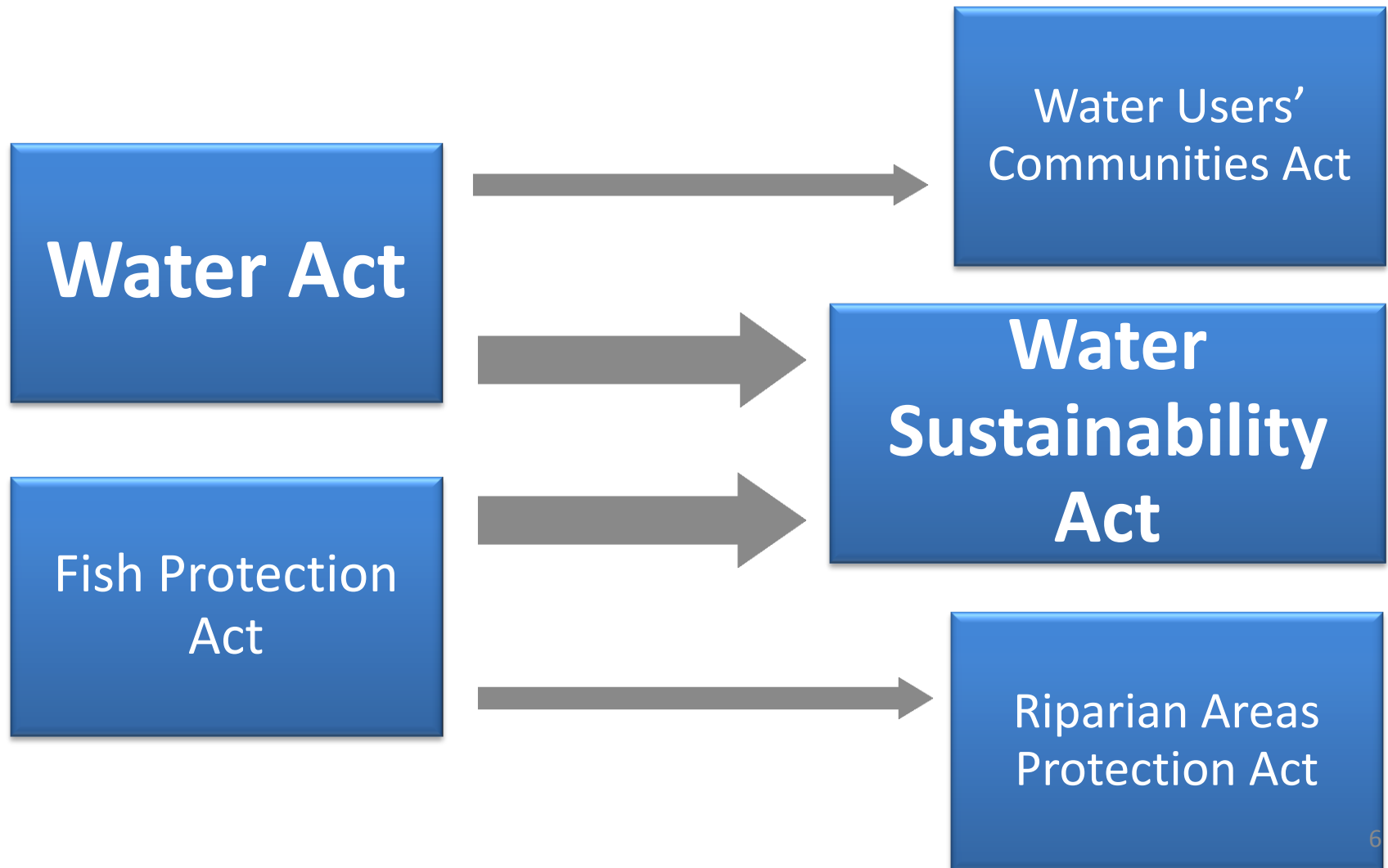


Water Sustainability Act (WSA)

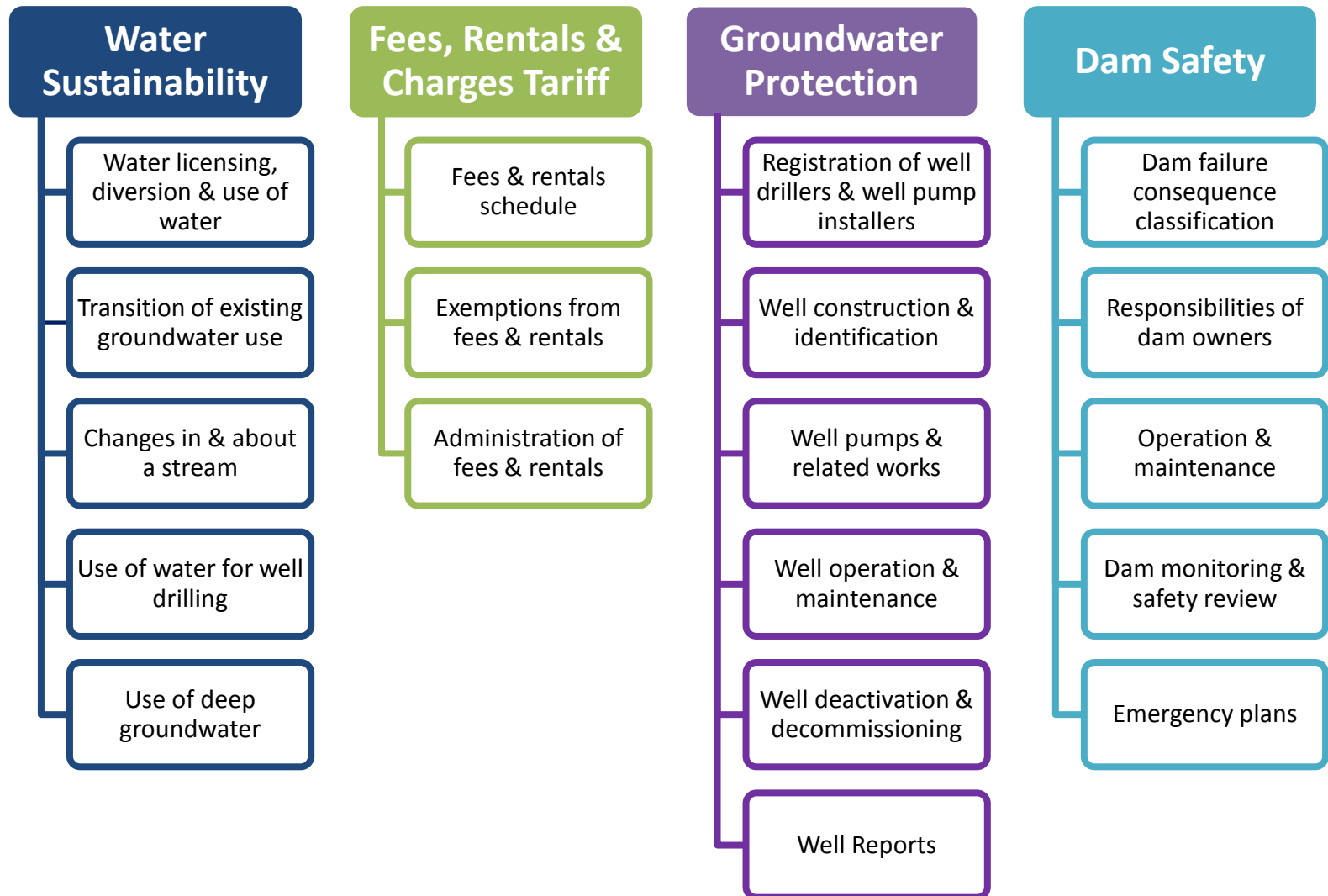


- In force February 29, 2016
- Repeals & replaces the *Water Act*
- Re-enacts water rights system & water protection powers
- New measures to:
 - protect stream health
 - regulate groundwater
 - manage water use during times of scarcity
 - expand opportunities to participate in decision-making

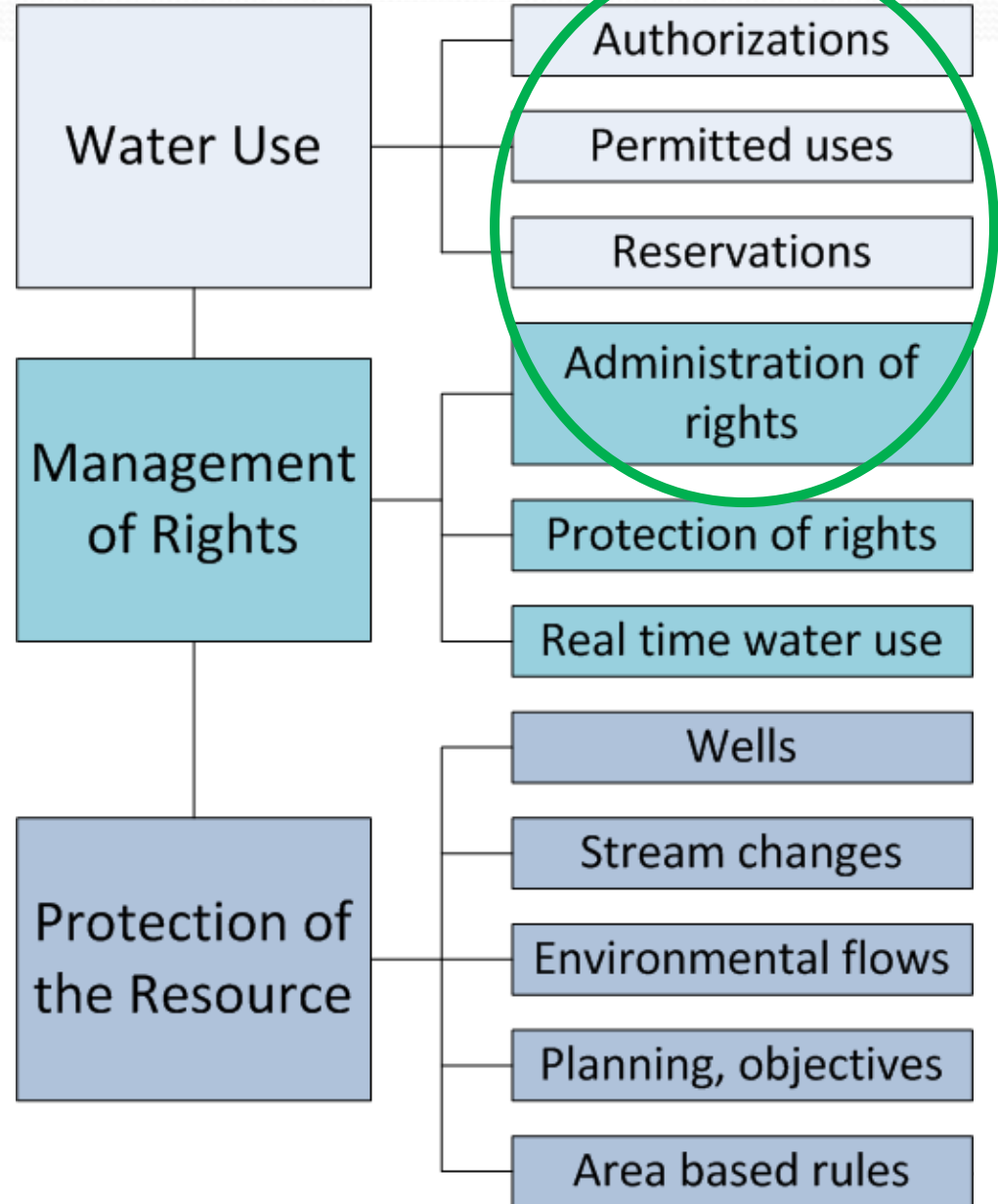
How have the laws changed?



WSA regulations at a glance



WSA regulates in three key areas



Water Rights, Diversion and Use



Stream water & groundwater are vested in government



- **Stream:** natural water course or source of water supply
 - lake, pond, river, spring, creek, swamp, glacier, etc.
- **Groundwater:** water naturally occurring below the surface of the ground

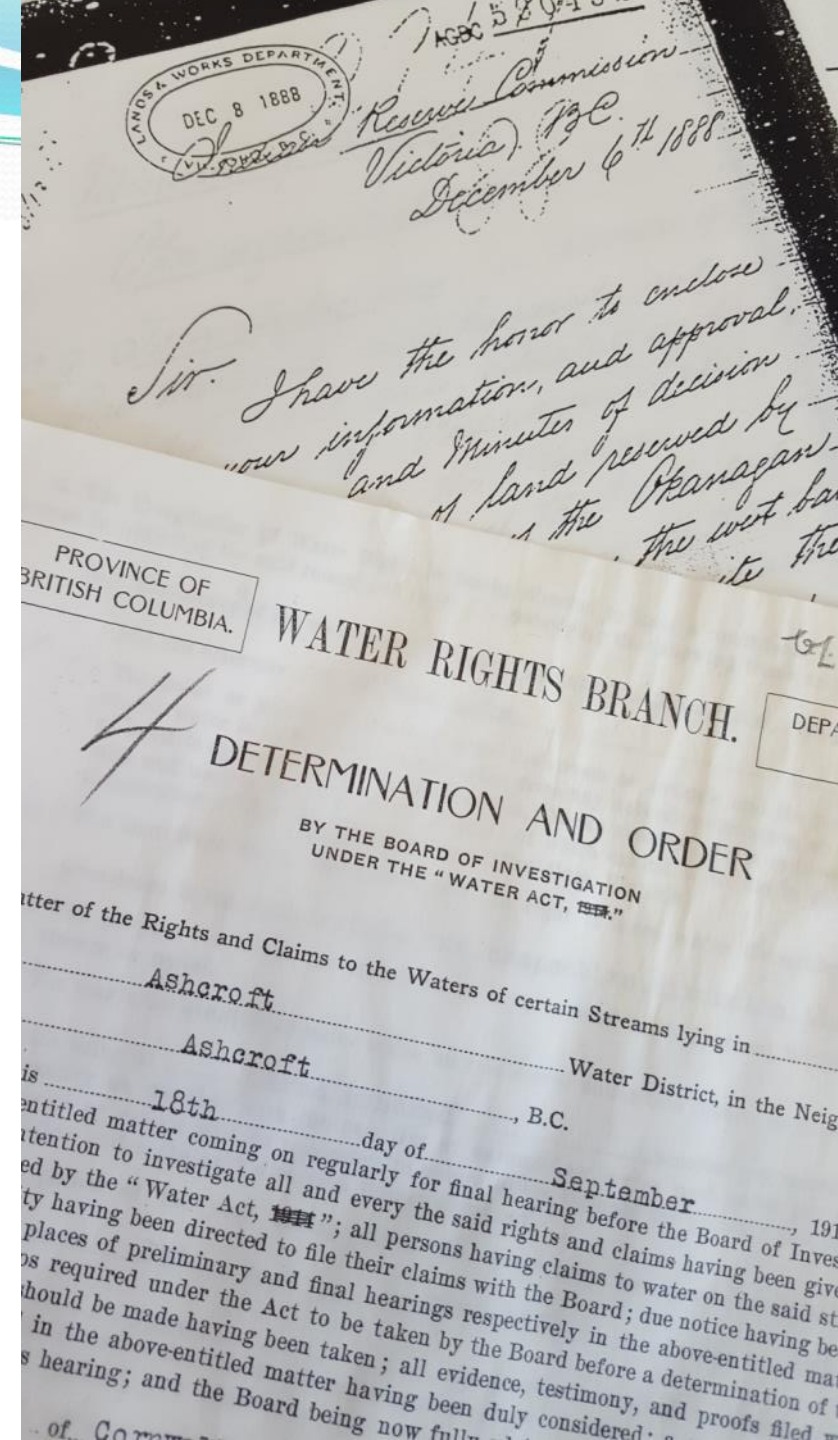
In general, the diversion and use of water must be authorized



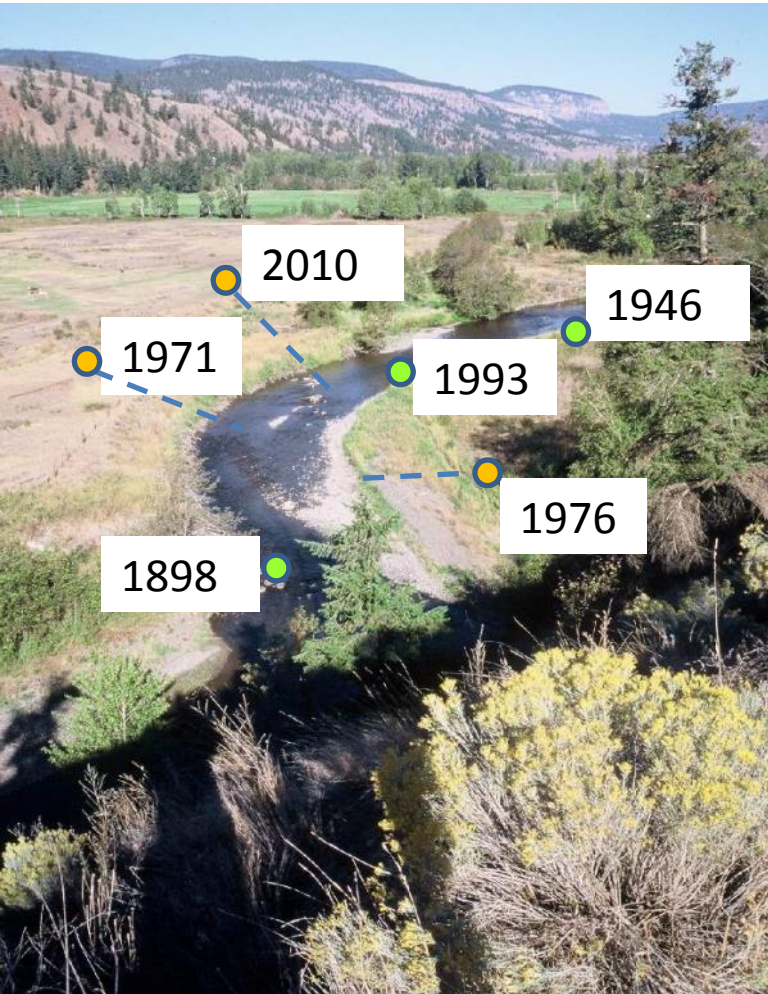
- **Water licence or use approval**
- Entitles holder to:
 - Divert and beneficially use water
 - Construct, maintain & operate works
 - Subject to terms & conditions
- Authorization not needed for:
 - Domestic water use (GW)
 - Fighting fires
 - Mineral exploration

Elements of an authorization

- Date of precedence
- Water use purpose(s)
- Quantity for each purpose
- Appurtenancy
- Works



Date of precedence determines priority of rights



- First in Time First in Right (FITFIR)
- Earlier date = higher priority
- Applied during shortages
- Dates of precedence of connected sources can be considered together

WSA modifies FITFIR to protect human needs and ecological values



Essential household use (up to 250 L/day) is protected

During a declared water shortage critical environmental flow can be given highest priority

If water shortage threatens a fish population Minister's order can override FITFIR to target reductions

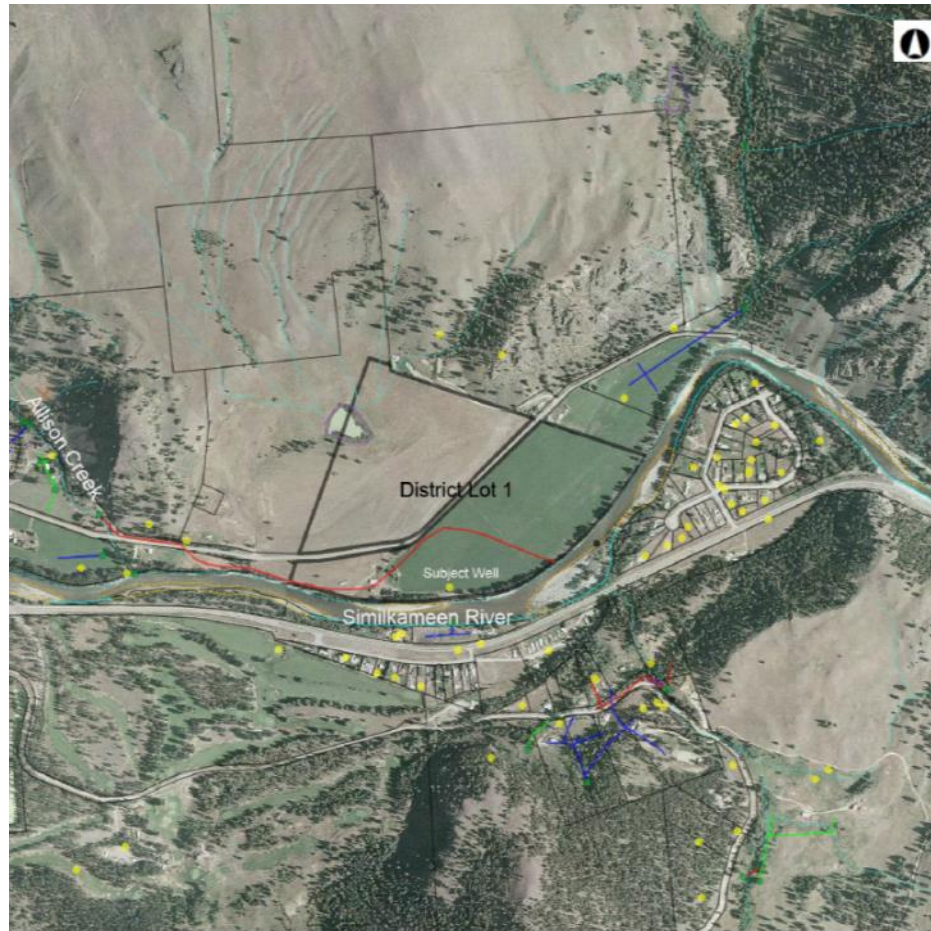


Water use purpose(s) and quantities must be specified in an authorization



- Domestic
- Waterworks
- Irrigation
- Mineralized water
- Mining
- Industrial (plus sub purposes)
- Oil and gas
- Power
- Storage
- Conservation
- Land improvement

Authorization must be appurtenant to land, a mine or an undertaking



- Must be in BC
- The water right runs with the appurtenancy
- The seller must notify the comptroller or water manager before completing the sale

Domestic use of groundwater is exempt from requiring an authorization



Unless a regulation:

- Requires authorization of domestic use
- “Closes” an aquifer

Domestic purpose includes water for:

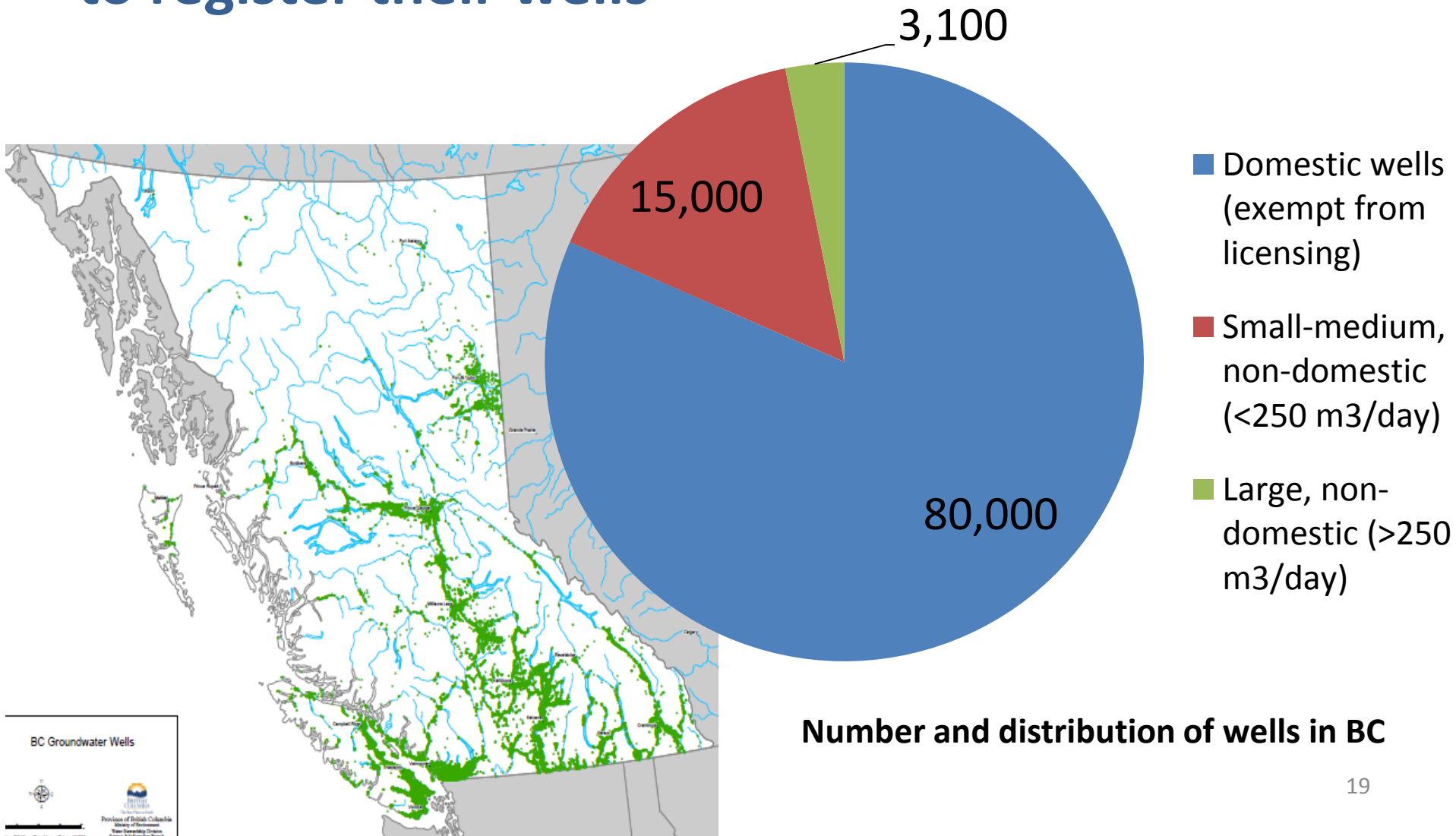
- household use
- fire prevention
- pets & poultry for household use
- garden & lawn irrigation

WSA gives domestic groundwater users a deemed water right

- Date of precedence = date of first use
- 2000 L/day per dwelling
- Decision maker must consider rights of domestic users when allocating water
- Subject to FITFIR during water shortages (except for Essential Household Use)



Government encourages domestic well owners to register their wells



Certain uses of water are allowed under the regulations but with no water right



- “Deep groundwater” in NE BC for oil and gas purpose
- Domestic purpose (stream source only)
- Well drilling
- Small-scale placer mining
- Mineral prospecting and exploration drilling
- Use is “at sufferance”
- Can apply for an authorization

Groundwater diversions exempt from authorization requirements



- Corridor ditches
- Local government drainage
- Agricultural drainage
- Building perimeter drains
- Pumping from a remediation well
- Drainage from a drainage well



Rights and Responsibilities



Fees and rentals for water authorizations

- Application & amendment fees
- Annual rentals based on water use purpose and authorized quantity
- Exceptions:
 - Waterworks local provider: reported use
 - Pulp mills: reported use & allocated quantity
 - Power producers: plant capacity & power generated
 - Oil & Gas Commission clients
- First Nations & prov/fed government entities generally exempt



Fee and rental rate examples

Example Use	Application fee	Annual Rental
Domestic stream water use	\$250	\$50 minimum \$2.25/1000m ³
Irrigation	\$250 – \$1000	\$50 minimum \$0.85/1000m ³
Waterworks Local Provider	\$1000 – \$10 000	\$200 minimum \$2.25/1000m ³
Pulp mill	\$1000 – \$10 000	\$1.30/1000m ³ (amount used) \$0.85/1000m ³ (remaining allocation)

Water rental calculator

www.env.gov.bc.ca/wsd/water_rights/water_rental_rates/calculator/

Authorization holder responsibilities



- Avoid damaging land, works, trees or property
- Inspect, maintain & repair works
- Deactivate or decommission works when authorization ends
- Liable for damage or loss resulting from construction, maintenance, use, operation or failure of works

A person must make beneficial use of water being diverted

Beneficial use:

- Efficient
- In accordance with the Act and regulations
- In the manner authorized



Licensees have a right to expropriate land



- Negotiate first!
- “Reasonably required” land to
 - Build, maintain, operate works
 - Prevent pollution of water for domestic or waterworks purposes
- Must pay compensation

Applying for an Authorization



Non-domestic groundwater use pre-dating WSA can continue if an application is filed by March 1, 2019



- Application fee waived until March 1, 2017
- Rentals assessed from Feb. 29, 2016
- Eligible for date of precedence based on date of first use
- If user fails to apply within the 3-year period, the use must stop

Priority date for transitioning groundwater use based on historic date of first use of water

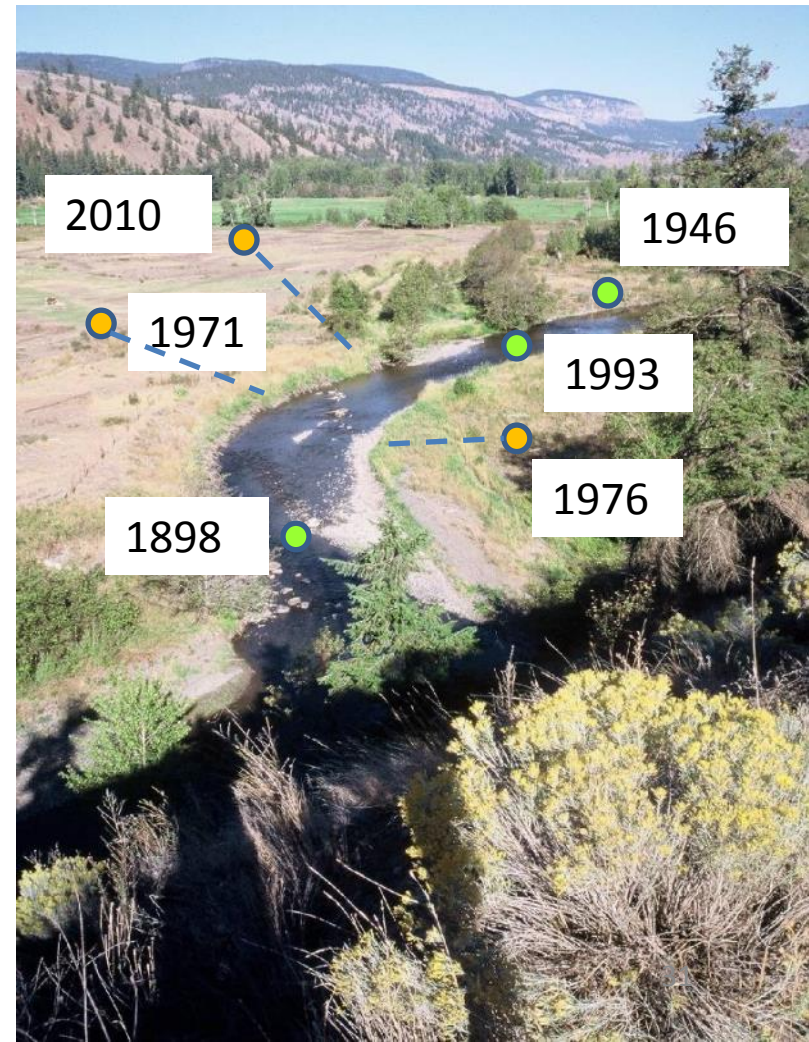
Date from which the **decision maker** is satisfied that groundwater has been used from an aquifer

- Regularly and beneficially on an ongoing basis
- For a water use purpose
- On the appurtenant land, mine or undertaking



Applicant must provide history & evidence of water use to support date of first use

- Government approvals or permits (e.g., EA certificate)
- Well construction report
- Pumping or water quality test records
- Invoice for pump installation or other work
- Signed statements from knowledgeable persons
- Other relevant evidence



New groundwater use must be authorized before diversion and use begins



- Use beginning after Feb. 29, 2016
- Date of precedence = application completion date
- Application fees payable
- Rentals begin when authorization granted

Apply at www.frontcounterbc.ca


B.C. Home
Forests, Lands and Natural Resource Operations
FrontCounter BC

FrontCounter BC Links

- [INFO about Natural Resource Applications](#)
- [START a Natural Resource Application](#)
- [MANAGE your Natural Resource Applications](#)
- [WHAT is FrontCounter BC](#)
- [WHERE FrontCounter BC Locations](#)
- [HOW to contact FrontCounter BC](#)
- [NEWS FrontCounter BC](#)


Helpful Links


- [BCeID](#)
- [BC Land Title & Survey](#)
- [BC Online](#)
- [Discovery Tool](#)
- [Minerals Title Online \(MTO\)](#)
- [Integrated Land and Resource Registry](#)
- [iMapBC](#)
- [Help](#)

**Help protect B.C.'s natural resources**

Report Natural Resource Violations, including damage or illegal use of Crown Land, forest or water:

- Fill out a [Report of Natural Resource Violation form](#)
- or call 1 844 NRO-TIPS (1 844 676-8477)
- To report poaching or pollution violations, contact the Conservation Officer Service at 1 877 952-7277 or visit their [website](#)



**Water**

Do you want to go use water for your home or business?
Apply for a new water licence or amend one online.

12/24/2015
Groundwater Licensing coming in early 2016

The provincial government intends to bring the [Water Sustainability Act \(WSA\)](#) into effect in early 2016. The Act will bring in new licensing requirements for non-domestic groundwater users as well as [new fees and charges](#). Groundwater licence applications will not be accepted until the WSA comes in effect.

Visit the [WSA website](#) for more information on the upcoming changes. Detailed information on how to apply for a groundwater licence will be available at [FrontCounter BC](#) in early 2016.

INFO
about Natural Resource Applications

START
a Natural Resource Application

MANAGE
Your Natural Resource Applications (with BCeID)

WHAT
is FrontCounter BC

WHERE
FrontCounter BC Locations

HOW
to contact FrontCounter BC



29 Office Locations

FCBC application guides provide detailed information requirements



Groundwater

Use of Groundwater

New Groundwater Licence Application

Existing Use Groundwater Licence Application

Use Approval Application
(not exceeding 24 months)

Abandonment / Amendments (Changes) to an existing Groundwater Licence

Abandonment

Amendment

Administration of Groundwater Rights

Notification of Water Licence Name
Change/Transfer

Mortgage Security

Change In and About a Stream

Change approval for work in and about
a stream

Some groundwater projects require an EA Certificate or exemption

Environmental Assessment Office



- Constructed **on or after the year 1995** that divert >75 L/sec for one year
- **Modify projects constructed prior to 1995** to increase diversion to >75 L/sec
- Modify >75 L/sec projects built prior to 1995 to **increase diversion by 35% or more**

Environmental Assessment
Office

www.eao.gov.bc.ca

eaoinfo@gov.bc.ca

A BCeID allows applicants to save their applications and return to them later



BCeID

BCeID - What is it?

BCeID is an online service that makes it possible for you to use one user ID and password to sign in securely to many Government services in British Columbia.

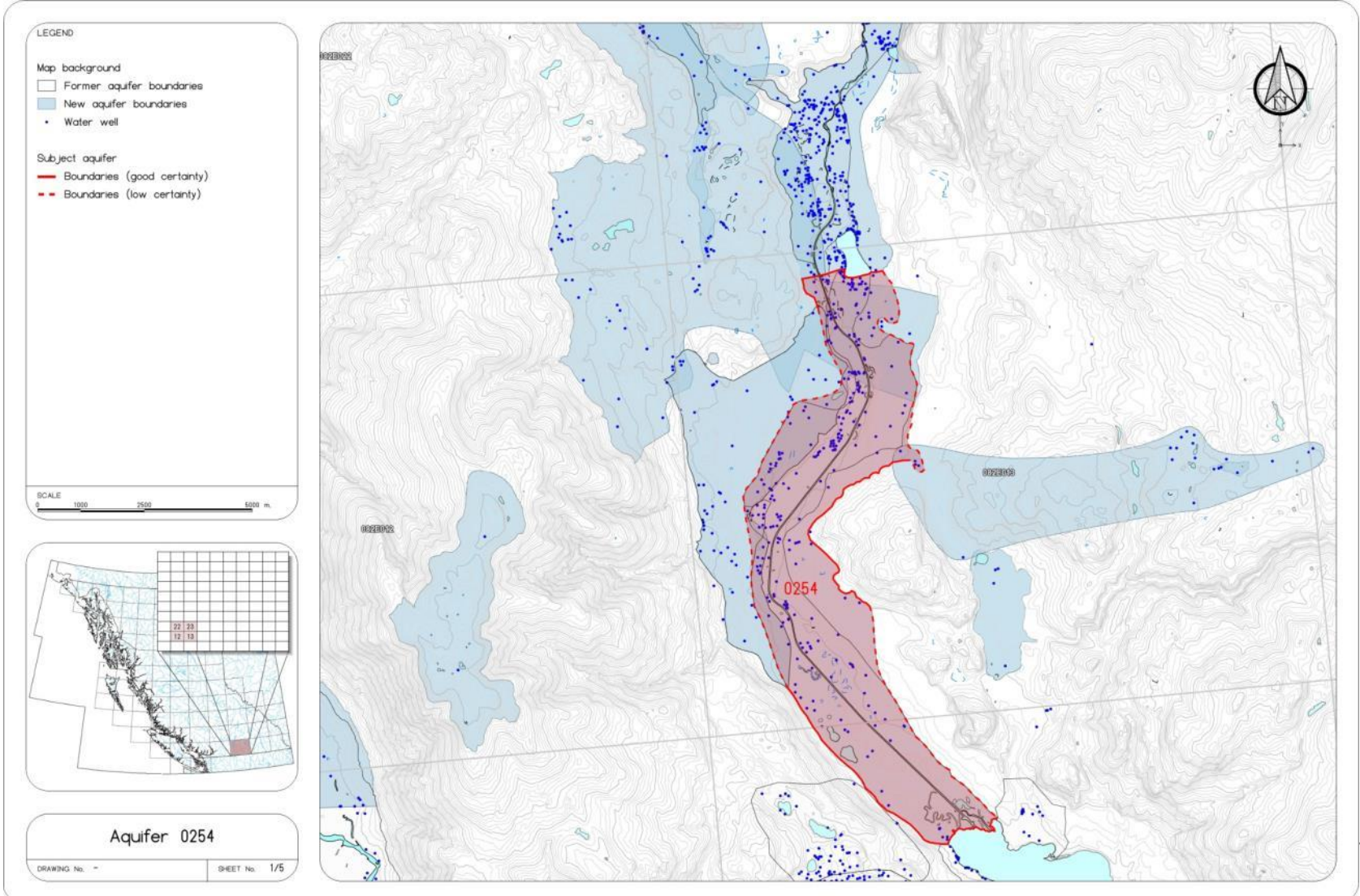
There are different types of BCeID. To apply for a natural resource application ANY BCeID type will work; the minimum requirement is a Basic BCeID which can be obtained in just a few minutes.

BCeID - Why use it?

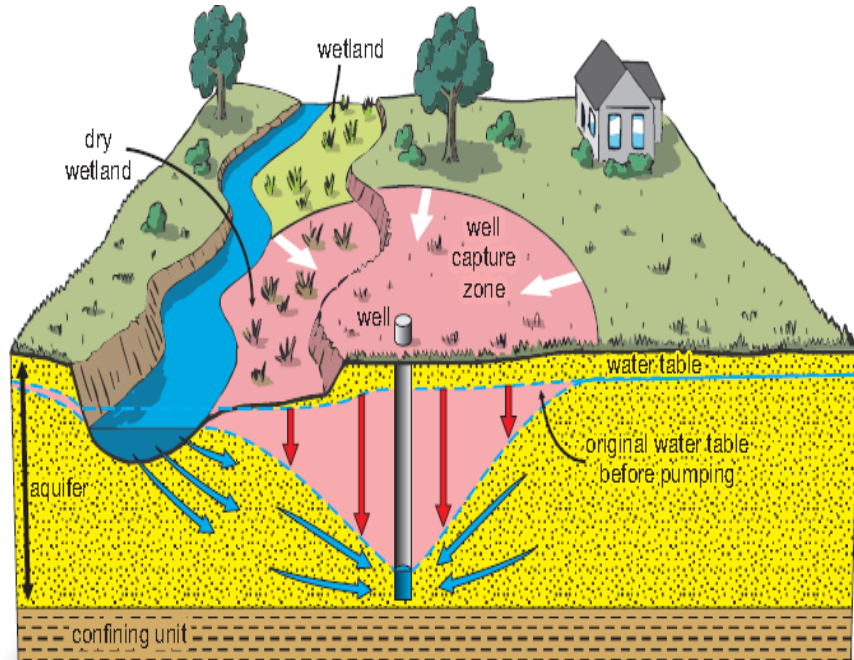
There are many benefits to having a BCeID Account:

- **Stop and start** - you can save and return later to complete your application without losing any information previously entered.
- **Real time status information** - check the status of your application in real time.
- **Access to your applications for multiple people (Business BCeID only)** - more than one person can edit/submit your application or check the status.

Considerations in Groundwater Licensing



Decision-maker considers how pumping may impact nearby wells, ecosystems and existing rights



- Drawdown around a pumping well can be significant
- Area of drawdown can also extend up-gradient
- Depth and extent of drawdown depend on geology & pumping rate

Decision-maker can require a technical assessment to inform his/her decision



- Adequacy of supply
- Potential impacts to other users
- Assessing likelihood of hydraulic connectivity to streams or another aquifer
- Other relevant issues

Screening tool will indicate if a technical assessment may be needed



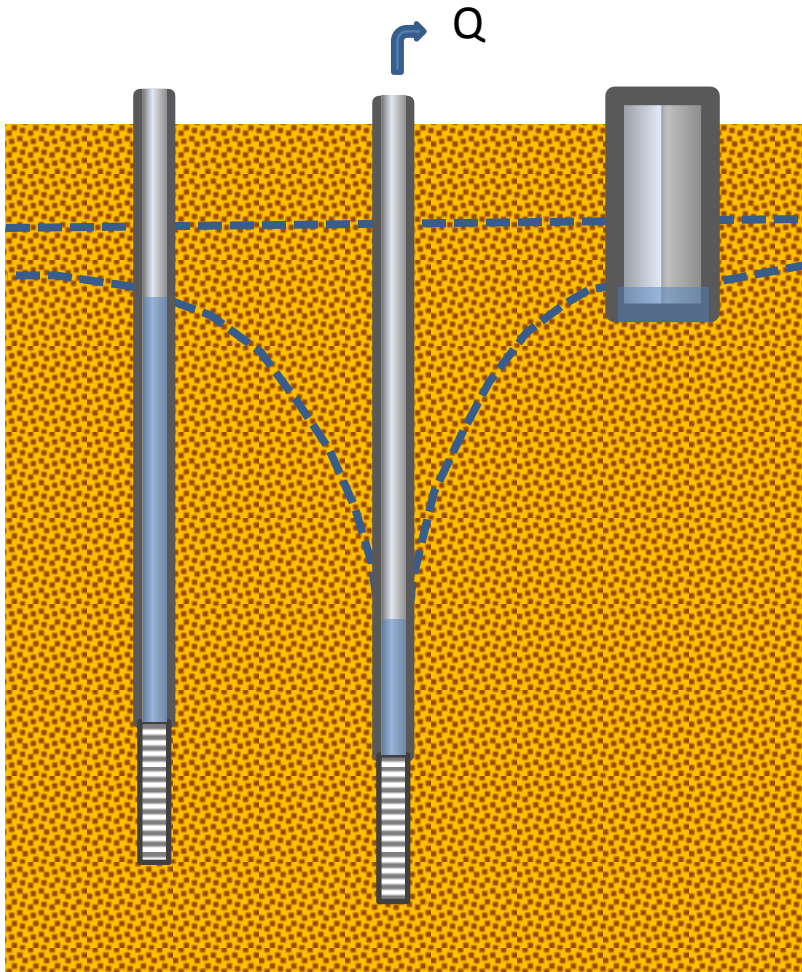
- Quantity of water
- Type of aquifer
- Proximity to other users
- Ultimate decision making authority rests with SDM

Technical assessments done under direction of professional with competency in hydrogeology

- Desktop study – available information
- Field study – test drilling, pumping test, well survey etc.
- Developing guidance materials



Technical assessment may include a pumping test to assess aquifer properties



- Adequacy of supply
- Impacts to other users
- Stream depletion
- Saltwater intrusion
- *Guide to Conducting Well Pumping Tests (2010)*

Decision maker must consider hydraulic connectivity in allocation & taking action

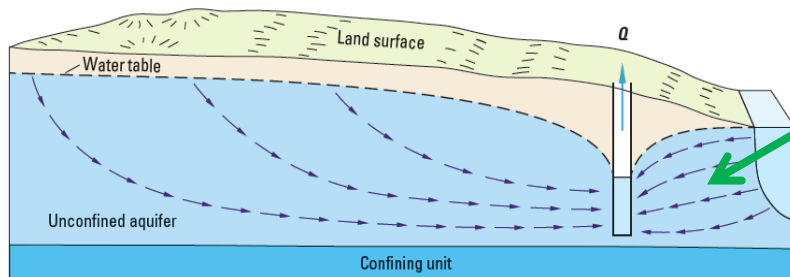
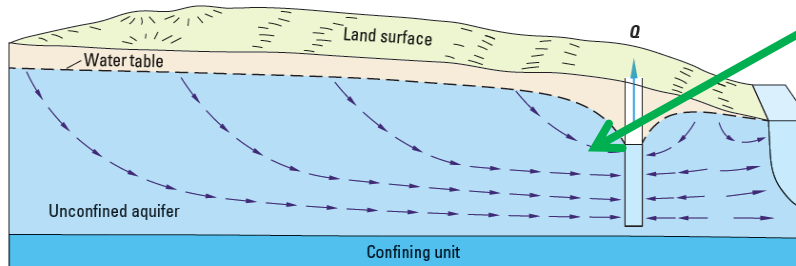
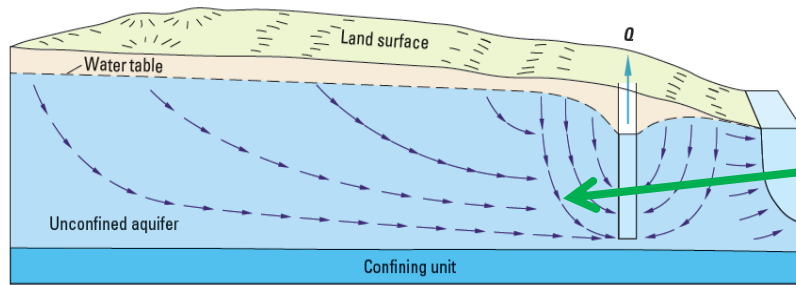
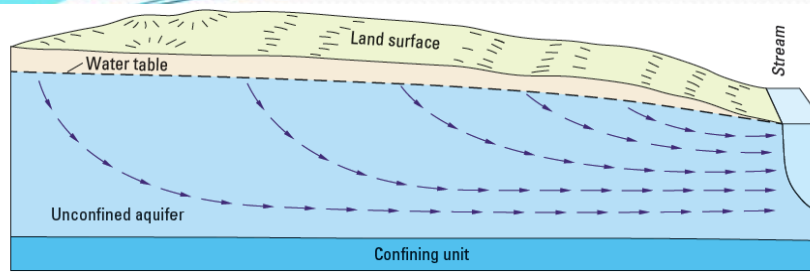


Hydraulic connectivity is the reasonable likelihood that pumping of groundwater from a well will eventually result in a change in the flow of a stream or a spring or a change in the level of a lake that overlies or borders the aquifer, over a time period of interest to the SDM

- Policy being developed

“Time period of interest” might be different in different situations

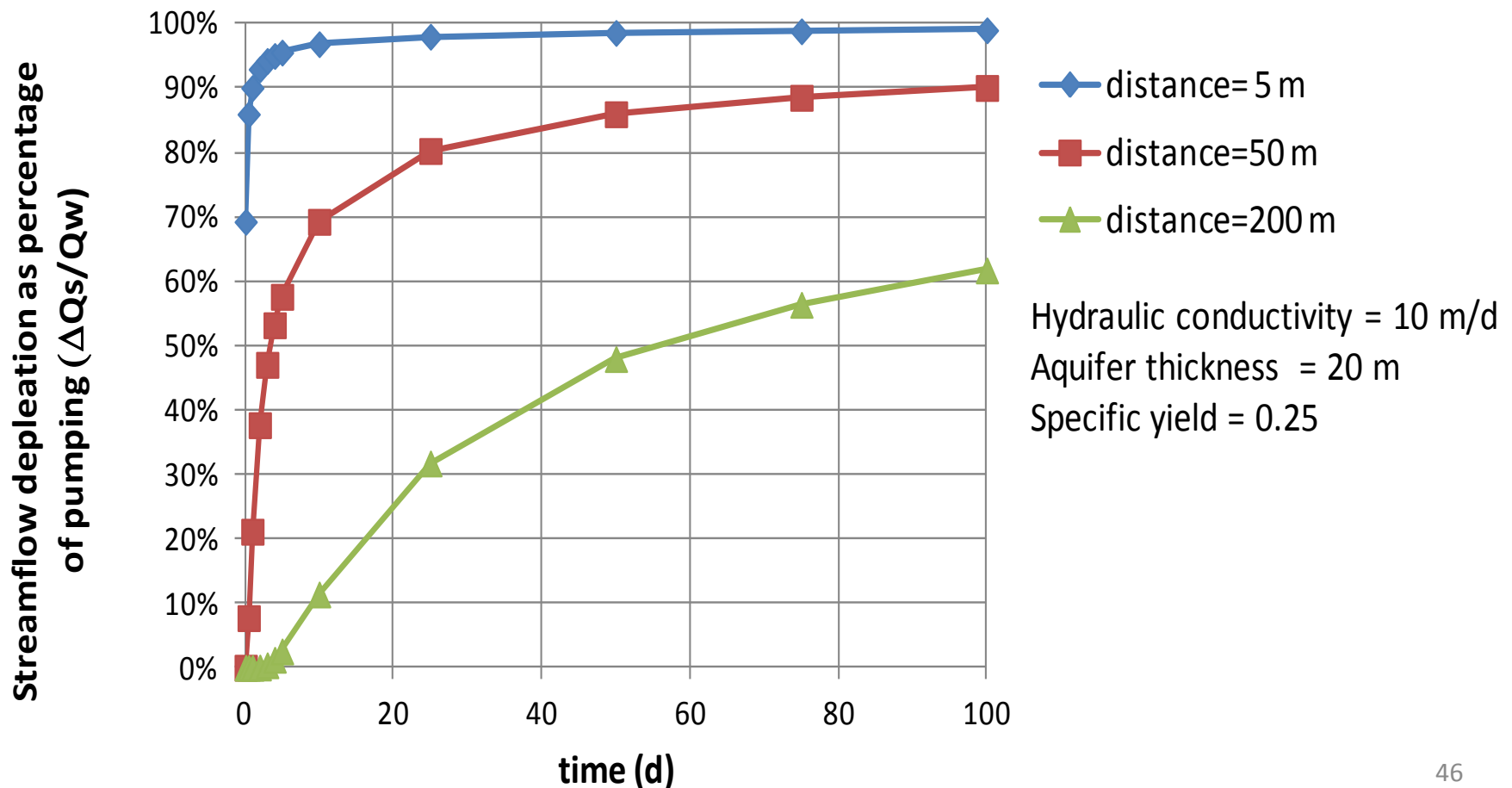
- Allocation
 - Regular use over longer periods under typical conditions
- Times of scarcity (e.g., drought)
 - Anticipated duration of low-flow event
 - Expected response time for specific diversions



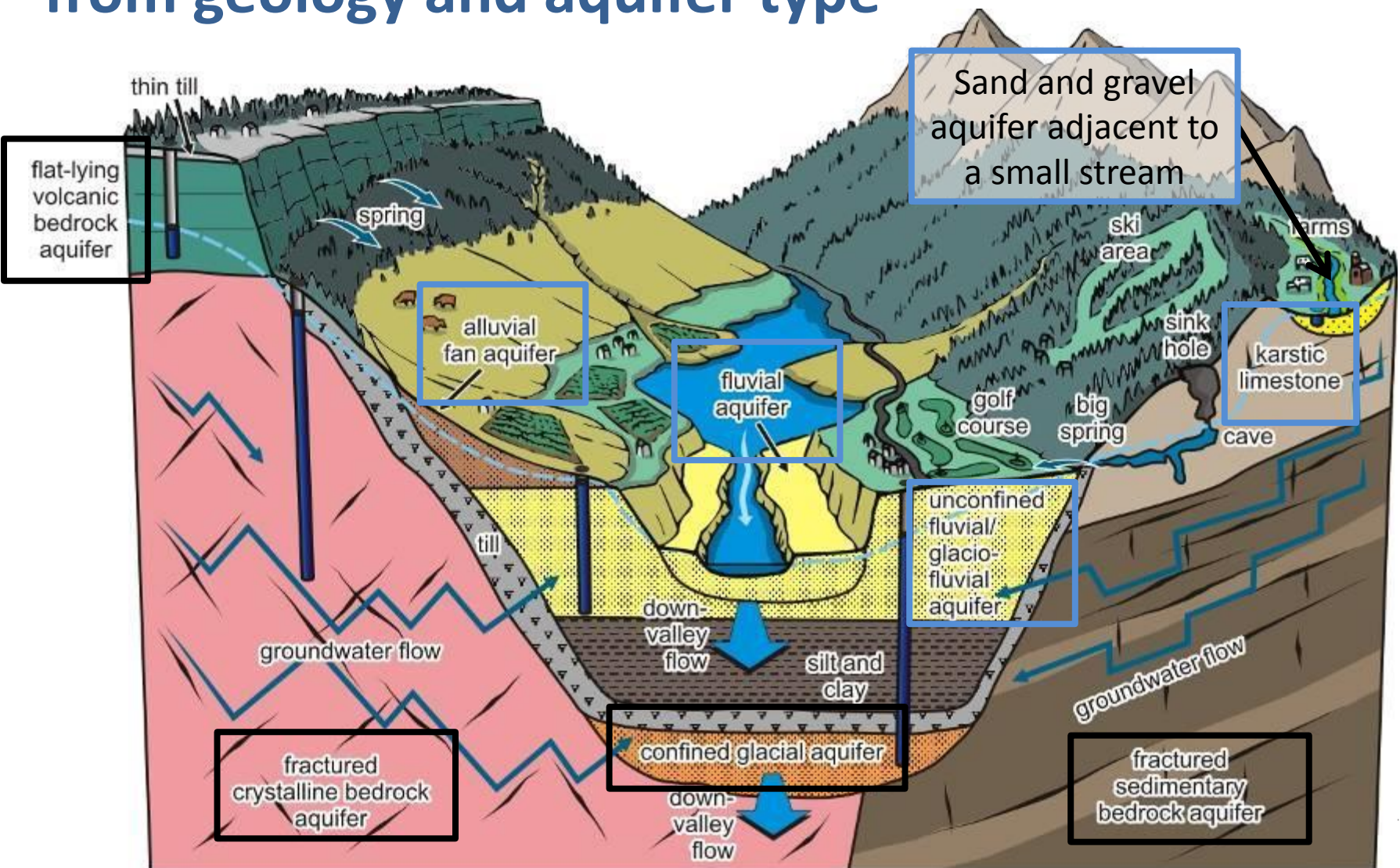
Streamflow depletion results from two key processes

- **Interception** of groundwater flow that would have eventually discharged to the stream
- **Infiltration** of water from the stream to the pumping well

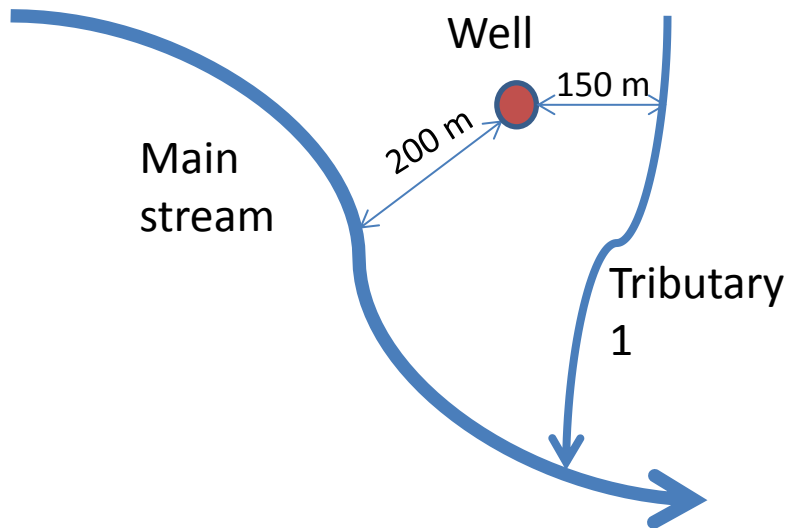
Streamflow depletion depends on distance of well from stream



Likelihood of hydraulic connectivity can be inferred from geology and aquifer type



Wells in a stream network may deplete multiple streams



$$f_i = \frac{\frac{1}{d_i^m}}{\sum_{j=1,n} \frac{1}{d_i^m}}$$

- Most water pumped comes from the nearest stream
- Pumping also draws water from farther stream
- Can affect both up-gradient and down-gradient segments
- Apportion demand to account for impacts of pumping on both streams

Questions?



[illegible]

Apply for a water licence at:

www.frontcounterbc.ca

1-877-855-3222