





#LoveYourLake



Natural is Beautiful

Healthy Shorelines for Healthy Lakes





Lakes are Facing Challenges

Lake environments face challenges

- Increasing development pressures
- Increasing population density
- Increasing resource use
- Decreasing wildlife habitat
- Degrading water quality



Common Goals of Lake Communities

Common goals include

- Reaching out to community
- Increasing awareness
- Encouraging caring land management practices
- Maintaining and improving lake health
- Creating capacity for data collection





What Is Love Your Lake?



- Packaged project transferable to many communities
- Encourages lake level stewardship and action for healthier shorelines
- Includes communications materials





What's Involved?

Recreation
Values
Top three Issues
Top three Actions
Water quality description
Particular concerns
Stewardship interest

- Property owner outreach: **survey delivery**
- Shoreline assessments
- Individual property reports
- **Values Survey and Lake Summary Report**
- Online resources at LoveYourLake.ca





Who's Involved?

Regional Organizations → RAH2050

Deliver the program / Hire staff, manage volunteers
Perform assessments / Enter data and edit reports

Lake Groups & Shoreline Property Owners

Volunteer / Participate in shoreline naturalizations
Support local knowledge mobilization



Develop the program / Provide training / Create materials / Provide secure database





Benefits to Lake Organizations & Municipalities

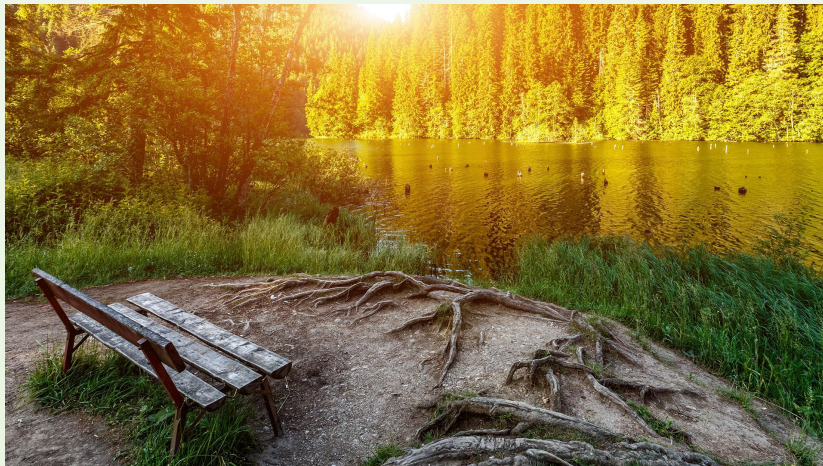
Engagement opportunity with shoreline property owners

Customizable communications pieces

Baseline ecological information

Access to Values Survey and Lake Summary Report

Consistent stewardship information and recommended actions





The Process

Love Your Lake
HEALTHY SHORELINES FOR HEALTHY LAKES

Shorelines are one of the most unique places on Earth. Your actions can have a huge impact on this delicate interface. Daily actions by all individuals help to conserve the water in lakes and rivers. Shoreline property owners in particular can play a significant role. But how do we know if our shorelines are healthy? The Love Your Lake program will assess the health of your lake's shoreline and encourage shoreline property owners to take voluntary stewardship actions.

Love Your Lake is a partnership program between the Canadian Wildlife Federation and Watersheds Canada. The program is delivered in your area by your local conservation group and lake organization. The intent of the program is to get shoreline property owners, like you, thinking about what you value about your lake and taking actions that reflect those values.

This program connects shoreline property owners with the information they need to make smart land management choices that improve wildlife habitat, water quality, and the overall health of your lake. The purpose of this survey is to identify what is important to you about your lake. Please answer the questions below as thoroughly and as honestly as you can.

Any publication of the survey results will be based upon collective, group data and will not report the input of any individual.

Please mail back the survey to:
Canadian Wildlife Federation
350 Michael Cowpland Drive, Kanata, ON K2M 2W1
or fill it out online at LoveYourLake.ca.

THANK YOU FOR TAKING THE TIME TO FILL OUT THIS SURVEY.

PERSONAL INFORMATION

1. NAME OF LAKE _____

2. YOUR NAME (FIRST AND LAST) _____

3. PERMANENT MAILING ADDRESS _____ PHONE _____

COTTAGE ADDRESS (IF DIFFERENT FROM ABOVE) _____ PHONE _____

E-MAIL ADDRESS _____

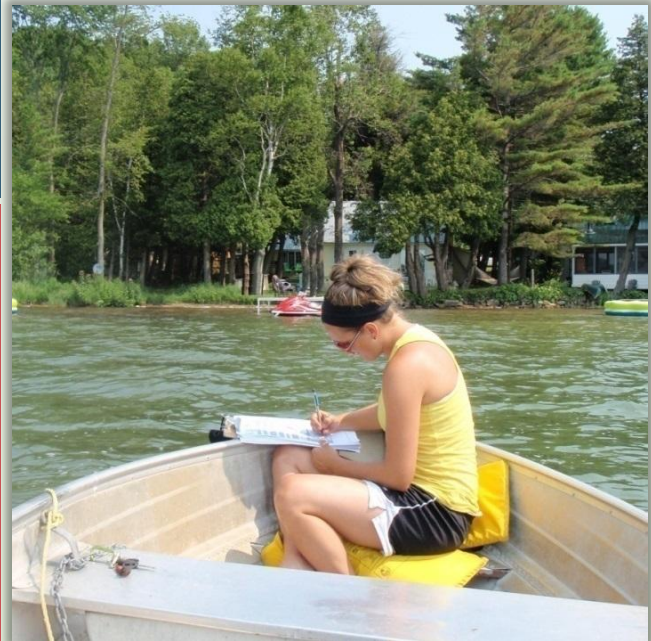
- Partnership agreements
- Introductory letter & **Values Survey**
- Property assessments
- Data entry
- Individual property report access
- Evaluation Survey
- **Values Survey** and Lake Summary **Report**
- Further engagement possibilities





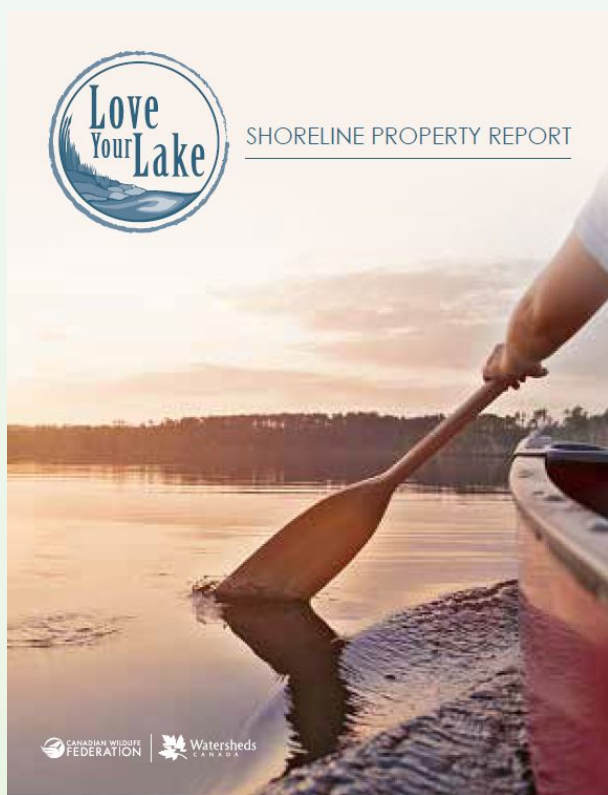
Shoreline Assessments

- Trained staff & student researchers
- From a boat – no disruption to shoreline property owners
- Observations only:
 1. Structures & docks
 2. Erosion controls
 3. Structures
 4. Vegetation
 5. Habitats
- Photograph as research to create private report - no people included





Shoreline Property Reports



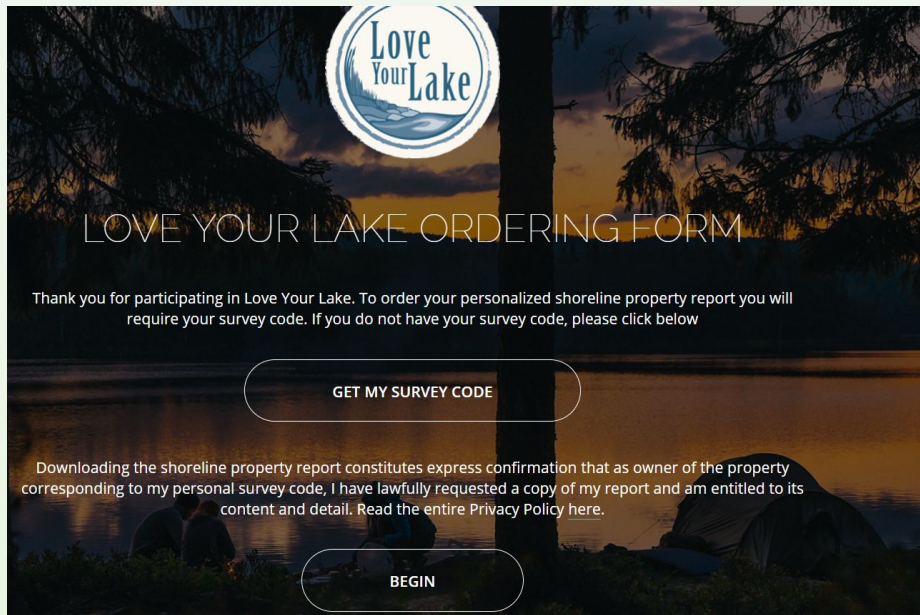
- Generated by assessment data
- Specific to each shoreline property owner
- Recommendations are targeted voluntary actions
- Additional local resources
- Non-regulatory, non-government





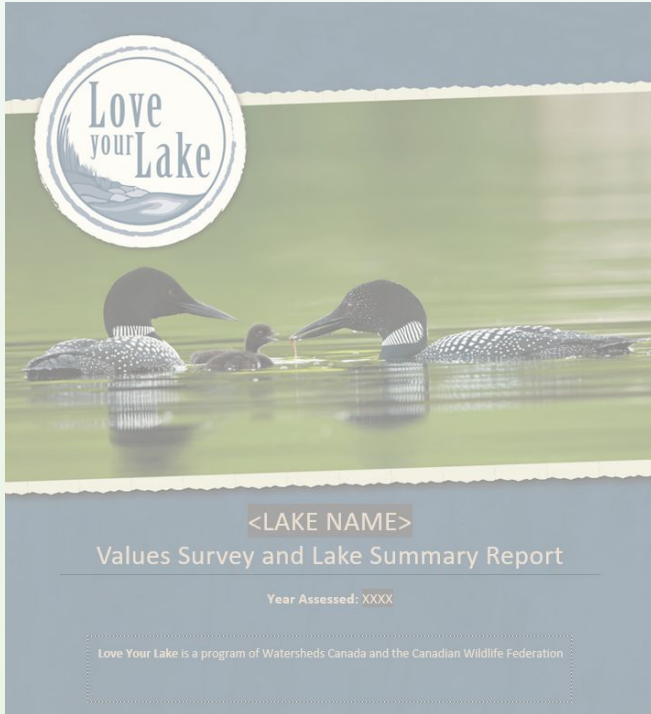
Access to Reports

- Individual private Survey Code letter mailed to each property
Unique survey code
- Ability to download a free PDF: MyReport.LoveYourLake.ca
Order a \$20 hardcopy report





Values Survey and Lake Summary Report



- Summarizes Values Survey responses and Assessment data
- Encourages community stewardship actions
- Resource for lake organizations





Long-Term Program Outcomes

- Targeted education & stewardship
- Identification of wildlife habitat for fish, amphibians, etc.
- Wildlife habitat improvement and protection projects
- Data can be compared over time
- Long-term outcomes can easily be evaluated

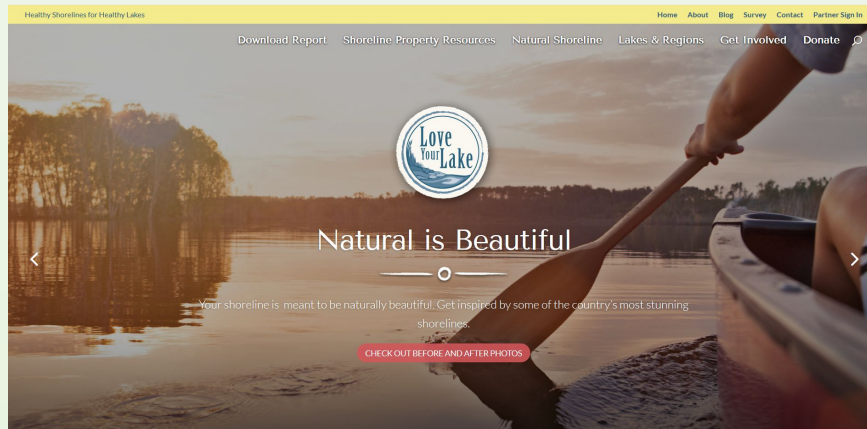




Love Your Lake Website

LoveYourLake.ca:

- Info about the program
- Surveys
- Action checklist
- Regional contacts
- How to get involved
- Shoreline information
- And more!





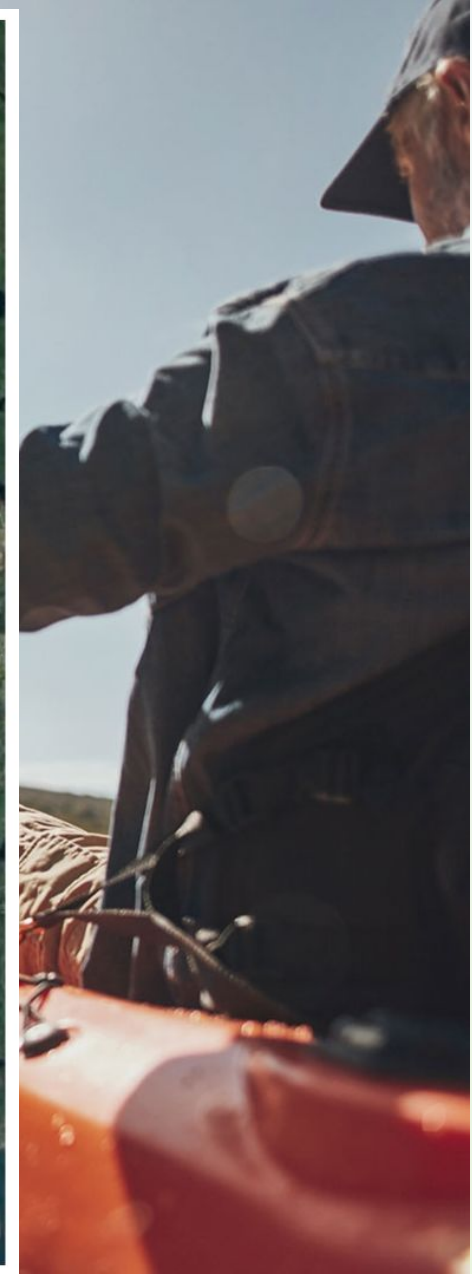
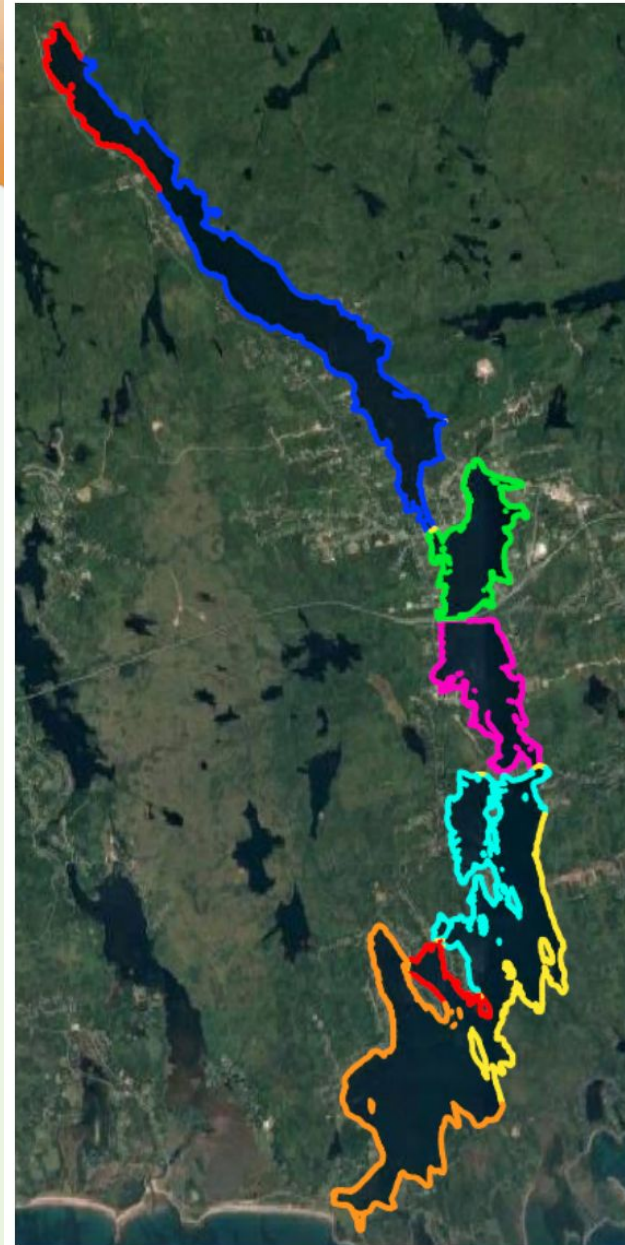
No local lake organization = no local partnership

COVID amplified context:

- closed local recreational club
- door to door engagement hesitancy

Local buy-in had divisiveness based on values of

- privacy and serenity
- previous regulatory threats ?
- more clarity needed as baseline researchers
- creative dialogue to further welcome solutions



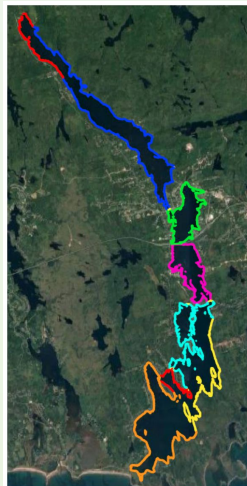
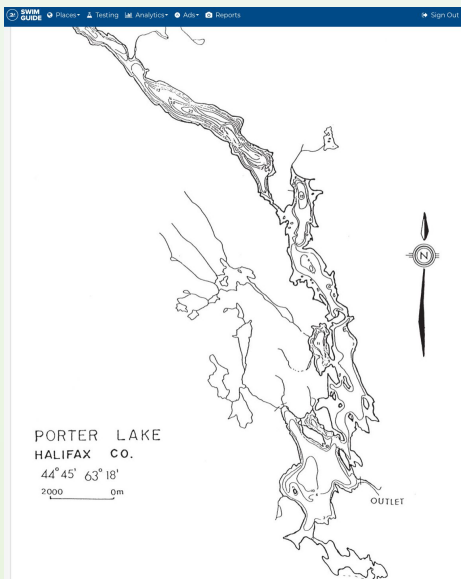
End of Pipe Treatment is the least effective or beneficial to the natural environment

Kidnap beach has proven beneficial use and recreational value to the community

Community concerns addressed include lack of monitoring on other areas of the lake

→ If Kinap is unswimmable based on its environmental context (shallow water with poor drainage)

“what other swimmable places should be also be closed on this lake?”



50% Pass 50% Fail (last 3 years)

→ **3,000 Swim Guide App** visits (last 13 months)



- Fences and decoys are common elements found in different sections
- 100% natural islands (crown land) are abundant
- According to ground-truthing with locals, new residents welcome the local summer gaggles with food unaware of the nuisance issue!
- Some suggestions for mitigating Kinap Beach closures would be the fairweather day rake/removal of feces to island shores to remove the abundant litter

Are Geese Causing Problems for Your Lakefront?

Here are three tips to help avoid any problems



1. Fence off the area
2. Scare them away
3. Modify the land

Shoreline Assessment Technician Steps New Lakes

Gathering Parcel Data & Organizing Mail-out

LYL technical background work (~10hrs/100 parcels which is the average sized lake)

- Reach out to lake association for possible mail-outs lists or any other assistance
- Access Property Online and click on shoreline parcels to create spreadsheet of data with owner names, parcel address, and alternate mailing address fields
([https://linns.novascotia.ca/LINNSDB/index\\$.Startup](https://linns.novascotia.ca/LINNSDB/index$.Startup)) Click “Details” to get mailing address
- Build mailing addresses with names and determine which parcels have alternate mailing address using formulas in excel
- Add parcel data into QGIS as REST service - this is the free version, also possible to buy license that has attribute info attached. Free version is only editable in QGIS.
(https://gis7.nsgc.gov.ns.ca/arcgis/rest/services/PLAN/PLAN_NSPRD_NoLabels_UT83/MapServer/0)
- Create unique ID for each parcel - could use PID, but I chose to start at 1 to make it easier to identify
- Print off screenshots from QGIS (or use tablet) of areas for in person mail-outs. Make note of parcels with alternate mailing address to skip.

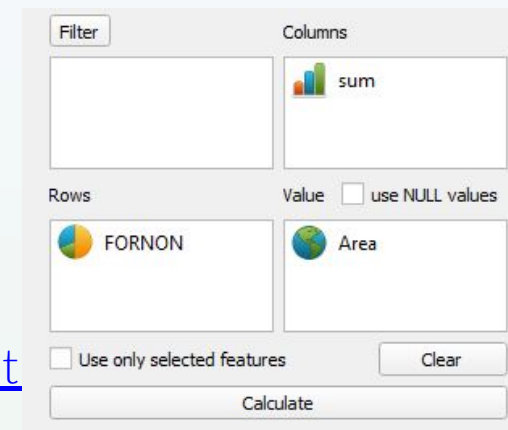
Volunteer work possible (~5 hours for delivery to 100 parcels, ~8 hours for logging, formatting & printing)

- Assist LYL in determining which addresses to mail and which to hand deliver, and create sections
 - Can also decide whether to do hand deliveries at all, maybe this outreach step is less important if the Lake Assoc. is promoting it?
- Record your delivery progress and parcels that can't receive a letter in a column in excel
- We used “x” for delivered, “y” for crown land, and “z” for those with no mailing address given
- Once in person mail-outs are complete, extract all the addresses that do not have text in the progress column, and paste into new sheet. Use remove duplicates tool and manually check all addresses as some will likely require formatting/cleaning. Then format addresses for printing - make field heights and widths constant for easier work once printed
- Print addresses and glue onto prepared envelopes with program info & owner survey, then mail

GIS & GPS Prep for Assessments: ~10hrs/100 parcels

- All these steps can be done on the **field tablet**, but I recommend doing them on a computer first and using OneDrive to sync files because of the processing power needed
- Associate parcel ID with spreadsheet fields - can either number data first or polygons first, then join tables to link data to parcels (only need parcel ID, location/address, and mailing address fields with owner name)
- Download water feature data (<https://nsgi.novascotia.ca/gdd/>) and add to map. Select your lake and extract into new layer. Buffer lake by 30m to include riparian zone. Clip parcels to buffered lake. Use the clipped parcels and the final layer as you are only assessing that far from shore.
- Add satellite imagery as XYZ tile in QGIS browser and add to map - I used Google's (<https://mt1.google.com/vt/lyrs=s&x=%7Bx%7D&y=%7By%7D&z=%7Bz%7D>)
- Use "Generate XYZ tiles" in Raster tools of Processing toolbox to create mbtiles of imagery so it can be used offline - I used only zoom level 21 and drew extent on canvas in small sections as it takes a lot of processing power
- Load field tablet with mbtiles of the section to complete that day, would not recommend adding more than necessary as it could crash QGIS because of file sizes
- Add GPS info panel to project (View > Panels > GPS info) and click connect once in field - can make GPS marker larger to see it better
- Turn labels on for the ID of each parcel for easy viewing in the field

GIS Research (~3hrs for one analysis, can be ongoing)



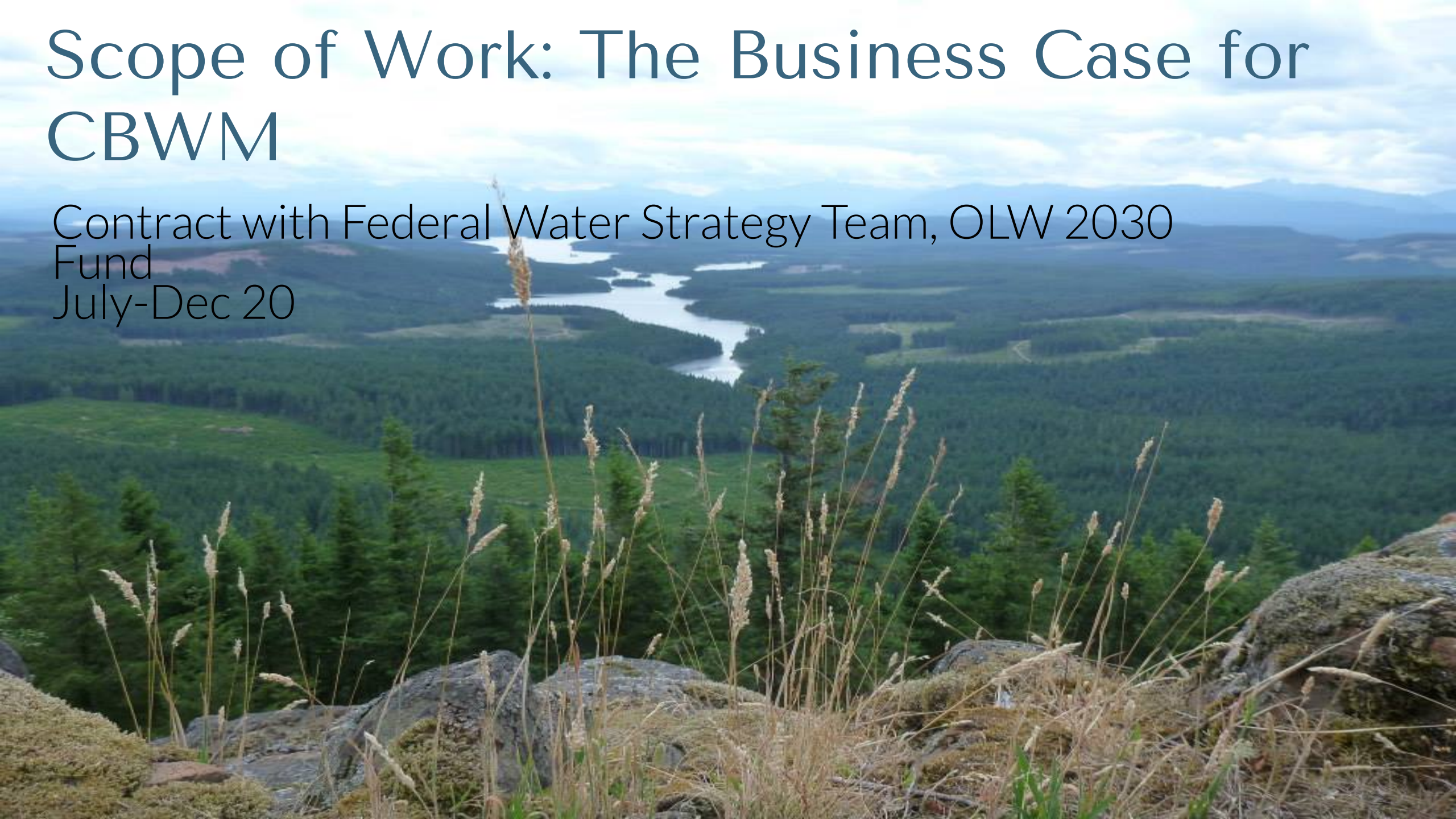
- Download forestry data of county (https://novascotia.ca/natr/forestry/gis/dl_forest)
- To get statistics of land cover type of riparian zone (Urban, Natural, etc)
 - Clip data to riparian zone parcel layer. Add plugin “Group Stats” and open. Drag fields into boxes as shown above
 - Copy results into excel sheet and label FORNON categories with metadata document
 - Calculate total and then percent for each category (sum/total => convert to percent)
- Can be repeated with other fields

- Lake Association
 - Contact to request any data that has been collected of the lake
 - Species, shoals, erosion, etc.
 - Integrate data into GIS when possible

	A	B	C
1	87 - Urban	1,309,230	48.17%
2	0 - Natural Stand	959,724	35.31%
3	70 - Wetlands	106,301	3.91%
4	98 - Roads	98,416.30	3.62%

Scope of Work: The Business Case for CBWM

Contract with Federal Water Strategy Team, OLW 2030
Fund
July-Dec 20



Context -

- Significant gaps in governmental monitoring capacity and freshwater data threaten watersheds across Canada. Community based water monitoring (CBWM) groups complement and augment capacity.
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- Community involvement in watershed protection continues to rise. 2017 landscape scan found the number of community based monitoring projects more than tripled between 2000-2016; more than 150 CBWM groups exist across Canada today.
- Increasing sophistication of CBWM is resulting in credible data and open-access collaborative datahubs, informed decision making and community responsiveness, network building and peer learning.
- Leaders in the field continue to advocate for Federal action and funding to ensure CBWM programs' longevity.



Benefits - Why invest in CBWM?

1. expand water monitoring to new regions, filling watershed data gaps
2. inform decision-making at various levels of gov't to reflect best available science
3. adapt and respond quickly to community's climate change challenges
4. leverage 4-6 times initial investments via collaboration, volunteerism, in-kind contributions
5. create new cross-sector partnerships, spurring innovation
6. realize nation-to-nation water-quality commitments through Indigenous CBWM programs
7. foster environmental stewardship in communities, educating citizens about science
8. improve health of watersheds and their inhabitants