

Shoreline Stewardship: Information for Lakeshore Recreational Property Owners in the Athabasca Watershed



PURPOSE

The purpose of this package is to provide information and resources to landowners living near the shoreline (riparian area) of lakes in the Athabasca watershed. Because these riparian areas play an important role in overall watershed health, the Athabasca Watershed Council (AWC) is raising awareness about the resources and tools available to lakeshore property owners for riparian conservation, and where needed, restoration.

WHO IS THE ATHABASCA WATERSHED COUNCIL?

The Athabasca Watershed Council (AWC) is a registered charity and one of eleven designated Watershed Planning and Advisory Councils working in partnership with the Government of Alberta (GOA) towards achieving the goals of the *Water for Life* Strategy¹:

- Safe, secure drinking water supplies
- Healthy aquatic ecosystems
- Reliable, quality water supplies for a sustainable economy



The Athabasca watershed stretches across northern Alberta.

¹ Water for Life Strategy: <https://www.alberta.ca/water-for-life-strategy#:~:text=The%20Water%20for%20Life%20strategy,since%20its%20release%20in%202003.>

WHAT IS A RIPARIAN AREA?

So, what is a riparian area (also sometimes referred to as riparian zone or riparian lands)? It is the transition area between the land and the water, what most of us think of as the shoreline. Within the Athabasca watershed, these areas are often characterized by diverse vegetation growing in the rich and moist soil along the edges of our lakes, rivers, streams, and wetlands and includes varieties of trees, shrubs, and grasses that are well adapted to the wet conditions of the area. It is often the most productive and valuable landscape found in an area and is essential for maintaining the health of aquatic ecosystems and the surrounding environment.

WHY ARE RIPARIAN ZONES IMPORTANT?

A healthy shoreline, or riparian area, can be beneficial and provide essential services for the land. The riparian area is important for:

- Improving water quality by creating a buffer between the water and land; this buffer filters out pollutants and excess nutrients and keeps them from reaching the water. A buffer with deep rooted vegetation also helps to prevent erosion and sedimentation of our waterbodies
- Recycling, absorbing and releasing nutrients as needed by the land
- Acting as a sponge to soak up and hold excess water which can reduce the risk of flood damage and retain moisture during droughts
- Providing habitat and food sources to a variety of wildlife, which can help support recreation activities like fishing and birdwatching

ASSESSING RIPARIAN HEALTH

Although riparian areas play a large role in watershed health, they can become degraded over time due to natural weather events, erosion, and land development. It's important to be aware of what a healthy riparian area looks like and to understand when to take proactive action to protect shoreline function. Riparian health assessments use visual observation of both vegetative and physical parameters to better determine the state of riparian areas.

Lake property owners can undertake their own riparian health assessments, using resources and help from organizations like Cows and Fish² or the Riparian Web Portal³ or they can engage conservation groups like the AWC⁴ or Highway2Conservation to undertake an assessment for them. Having an idea of the vulnerable areas of your riparian area can help you address problems and better protect the benefits you gain from a healthy shoreline.







² Cows and Fish Health Assessment: <https://cowsandfish.org/riparian-health/>

³ Riparian Web Portal Measuring Health: <https://www.riparianresourcesab.info/measuring-health>

⁴ Athabasca Watershed Council: <https://awc-wpac.ca/athabasca-watershed-shorelines-initiative/>

SUGGESTIONS FOR CONSERVATION

After assessing your shoreline's health, you may discover that your riparian area is healthy and functioning properly! Congratulations! But you also want to ensure you continue to maintain that health. By continuing to monitor the riparian area on your property, you can better observe the needs of the shoreline and act before extensive restoration is needed. Steps to take in conserving the shoreline include:

-  Limiting the use of chemical products (e.g., pesticides, fertilizer) on your lakeshore property, particularly near the shoreline
-  Leaving natural debris like fallen branches or leaves on the shoreline
-  Avoiding unnecessary removal of native vegetation
-  Constructing seasonal floating or pipe docks to allow for water access without affecting the rest of the shoreline. These types of docks have a lower impact on the environment than permanent structures and they are cheaper than other dock alternatives.

Other low-impact development techniques, like using rain barrels, rain gardens and permeable pavements to increase water infiltration and reduce surface water run-off can also help reduce the strain on your riparian areas. The Alberta Low Impact Development Partnership⁵ provides resources on different tools that can be implemented and how they can benefit your property. Implementing practices like these can help protect your shoreline and are not as costly as restoring a damaged riparian area.

Also, watch out for invasive plant species trying to take over your riparian area. These species oftentimes take away space and nutrients from native species and they won't support the ecosystem as much as native species. Invasive species are often not the preferred food source or habitat for existing native organisms and have a reduced capacity to manage the nutrient balance. The Alberta Invasive Species Council⁶ is a helpful resource to consult as it provides factsheets and information about different invasive species commonly found in Alberta.

Invasive Species

- Common Tansy
- Canadian Thistle
- Ox-eye Daisy
- Kentucky blue grass
- Dandelions
- Foxtail barley
- Scentless chamomile

You can also observe the usage of the shoreline by different animal species to get a better sense of the services your shoreline is currently providing. This can allow you to better manage how you interact with the area and help with decision-making if needed. Tools such as the eBird⁷ and iNaturalist⁸ websites can be used to keep track of species you identify and provides information on other species found in your area. The better

⁵ Alberta Low Impact Development Partnership: <https://www.alidp.org/resources/the-lid-toolbox/tools-for-achieving-lower-impact>

⁶ Alberta Invasive Species Council: <https://abinvasives.ca/>

⁷ eBird Website: <https://ebird.org/home>

⁸ iNaturalist Website: <https://www.inaturalist.org/>

you understand how your shoreline is doing, the better you can support its health and be stewards of your local ecosystem.

Responsible recreation can also help conserve your riparian area. By avoiding the use of vehicles and heavy equipment along the shoreline, it can prevent damaging riparian plants and reduce the impact on shoreline soil. *Keep Wheels Out of Water*⁹ is an initiative promoted by the GOA with the aim of informing the public that driving in bodies of water or on their shorelines is illegal and can cause environmental damage.

Good boating practices can also help protect your riparian area, such as not operating in shallow waters or near vulnerable vegetation areas. Using *Clean, Drain, Dry*¹⁰ practices can also help prevent invasive species and diseases from entering your lake and causing problems for the ecosystem.

METHODS TO RESTORE A SHORELINE

If you determine your riparian area is unhealthy, there are different methods to restore its health and function to ensure it continues to provide helpful ecosystem services for your land. The restoration method used will depend on the health of your shoreline and the issues you may be looking to fix.

Passive restoration involves letting the vegetative area regenerate by itself. This is the ideal method of restoration since it reduces the impact and allows the environment to recover with limited human interference. This is beneficial because it lets the ecosystem prioritize its needs and is a low-cost method of restoration. Common methods include fencing off areas as they are restored to reduce damage caused by human and animal activity as well as letting the shoreline recover and limiting the access to the water to a single pathway.

The other method of restoration is more active. In this case, it's important to take into consideration the timeline that any restoration would take place. It's best to keep restoration efforts to times when wildlife are not dependent on the area for nesting or spawning to reduce the impact on their activities. Also, any activity that involves altering the shoreline (below the high-water mark) may require approval from the GOA¹¹, so it's important to consider the necessity of taking more direct action and how it will affect the current state of the area.

One recommended method for active restoration is to plant diverse native species that will help with issues currently affecting your lake. Having a healthy vegetative diversity will allow for better tolerance of the restored area to environmental fluctuations and create a productive environment for various animal species.

⁹ Keep Wheels Out of Water: <https://www.alberta.ca/assets/documents/ep-recreation-wheels-out-of-water-poster.pdf>

¹⁰ Clean, Drain, Dry Alberta: <https://www.alberta.ca/clean-drain-dry-your-gear.aspx>

¹¹ Public Lands Act and Water Act: Shoreline/Water Body Modifications Facts at Your Fingertips: <https://open.alberta.ca/dataset/b2db6532-b7a1-4334-a18c-394991aa45e8/resource/39b5a687-0108-4f7b-863a-a6c1eeacb1b0/download/shorelinewaterbodymodifications-jun2017.pdf>

A good indication of types of species to plant is to identify native species in neighbouring healthy riparian areas. The Alberta Native Plant Council¹² offers resources such as a plant database and field guides that can be consulted for tips on identification and they also provide sources for purchasing native vegetation seeds and plants. Some examples they provide of common native species found in the Athabasca Watershed to consider for planting are listed to the right. Sources of native plant material can be found under the Growing Native Plants¹³ page of the ANPC for lake property owners to consult.

Native Species to Plant

- Dogwood
- Saskatoon
- Willows
- Balsam poplar
- Sedges
- Common cattail
- Small-fruited bulrush
- River alder

The plant species you plant will depend on the moisture level, soil type and amount of light in the area you plan to plant. Some things to consider:

- If the issue involves soluble nutrients and pesticides, the growth of different species of grasses and trees will contribute to better filtration.
- Types of grasses will also be helpful in cases of excess sediment-bound particles and pesticides, which can have negative impacts on aquatic life.
- For concerns of erosion and flooding and how water can impact your property land, consider growing trees and shrubs with deep roots that can stabilize the shoreline.

Growing native riparian vegetation is essential for maintaining biodiversity and health in lake ecosystems and these species will provide resistance to pests and will be better adapted to the ecosystem's conditions and needs. By supporting this growth, we can protect and restore beautiful recreation areas to the benefit of both wildlife and local lake communities.

COMMON QUESTIONS

How do I know if my shoreline is healthy or not?

A healthy shoreline will have a wide variety of lush vegetation in various stages of life. Having different trees, shrubs and grasses that create good ground cover and an abundance of habitat is beneficial to the ecosystem. Organizations such as Cows & Fish¹⁴ have guides on assessing the health of riparian areas and can be used to better understand the state of your shoreline.

How wide of a buffer does my shoreline need?

The size of your buffer area will depend on the size of the waterbody and the other activities happening on the land. The issues that you want to address will also affect the width needed. A wider buffer may be needed if the slope is steeper, if erosion or flooding is a concern, or if the activities on the land involve high management. The GOA guideline is that a buffer zone should be at least 30 meters wide to provide essential filtering and wildlife services. If a wider buffer is not possible, pairing it with a grass filter strip of at least 5 meters can help to separate upland areas and reduce the load on the riparian buffer.

¹² Alberta Native Plant Council: <https://anpc.ab.ca/>

¹³ Growing Native Plants (ANPC): https://anpc.ab.ca/?page_id=2003

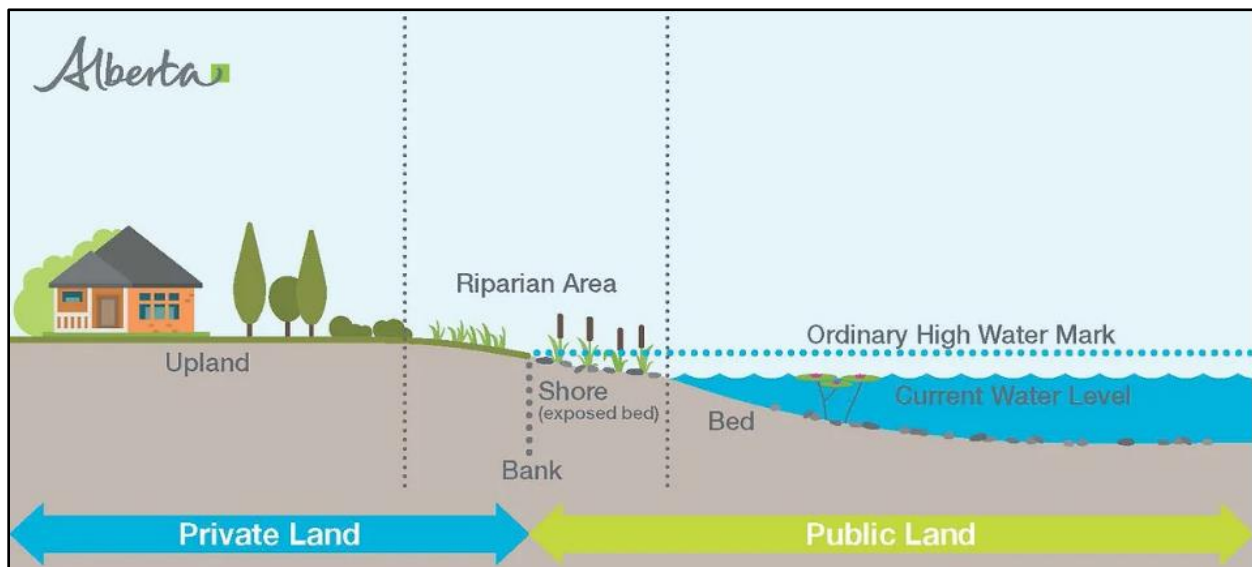
¹⁴ Cows & Fish - <https://cowsandfish.org/>



Unhealthy riparian area with bare ground and poor vegetative cover (left) versus a healthier riparian area where vegetation is reestablishing along the bank, creating a narrow buffer (right).

Where does my property end?

In most cases, your property extends only to the “Ordinary High-Water Mark” or OHWM where the water typically meets the land during normal water levels and therefore does not include the aquatic plants in the water and the lake itself. The lake bed and shore up to the OHWM is considered Crown land and is owned by the GOA and authorization is needed before making any changes. There may be exceptions to this rule such as if your property is connected to an Environmental Reserve. It’s best to contact the local county office or the GOA to determine exactly where your specific property ends, as well as consult the property land title or survey map for more detailed information.



Do I need permission to build a dock?

The GOA has created a disturbance standard for temporary seasonal mooring structures, including docks¹⁵. If your property and intended structure align with the criteria described in the Mooring Disturbance Standard, then you do not require authorization. If not, you must receive proper authorization prior to installing any mooring structures. Details on applying for authorization and regional contact information are included in the *User Guide for Dock Authorizations*¹⁶ for landowners to consult.

Can I add sand for a beach or rocks to stop erosion of the shoreline?

It's recommended that only natural vegetation be used on the shoreline. Natural species are best adapted to the area and will provide the best protection against erosion. Any changes to the shoreline below the OHWM require permission from Alberta Public Lands¹⁷ and possibly from the Department of Fisheries and Oceans before they can be done. Fisheries and Oceans Canada¹⁸ can help review and determine any authorizations needed for projects near the shoreline and their website also provides links for those applying for authorization.

How do I know whether I need permission for my restoration or conservation activities?

A good resource to consult is the GOA's *Shoreline/Water Body Modifications Facts at Your Fingertips Factsheet*¹⁹. This factsheet provides links and information about approvals for shoreline modifications and includes an overview of the application requirements. The Shorelands²⁰ and Lakeshore web pages²¹ on the GOA website also provide an overview of different activities and their approval requirements that can be helpful for finding additional information.

What funding programs are available?

Organizations and governmental bodies may provide programs that could support your restoration/conservation projects. The Green Acreages Program²² is managed by the Land Stewardship Centre and may provide funding to landowners for projects such as riparian restoration, the creation of rain gardens, and the installation of shoreline fencing. Other organizations that may have funding programs available can include the Alberta Lake Management Society as well as local stewardship groups and municipalities in your area.

¹⁵ Disturbance standard for temporary seasonal docks and other mooring structures for personal recreational purposes: <https://open.alberta.ca/publications/disturbance-standard-temporary-seasonal-docks-mooring-structures-personal-recreational-purposes>

¹⁶ User guide for dock authorizations: <https://open.alberta.ca/publications/user-guide-for-dock-authorizations>

¹⁷ Shoreland Approvals, Alberta Public Lands: <https://www.alberta.ca/shorelands-approvals-and-regulatory-requirements>

¹⁸ Fisheries and Oceans Canada Project Review: <https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/request-review-demande-d-examen-001-eng.html>

¹⁹ Shoreline/Water Body Modifications: Facts at Your Fingertips Factsheet: <https://open.alberta.ca/publications/public-lands-act-and-water-act-shoreline-water-body-modifications-facts-at-your-fingertips>

²⁰ Shorelands, Government of Alberta: <https://www.alberta.ca/shorelands.aspx>

²¹ Lakeshores, Government of Alberta: <https://www.alberta.ca/lakeshores.aspx>

²² Green Acreages Program: <https://www.landstewardship.org/enable/programs/green-acreages>

Why should I bother if no one else is going to restore their shoreline as well?

Any action to restore the riparian areas in the watershed can help improve the health of the ecosystem and the benefits it brings to you and your property. So, even doing a small project can help the condition of your shoreline. But collective action is even better, so talk to your neighbours and organizations in and around your community. Creating a bigger project can improve the effectiveness of your action and could possibly gain more funding to help support it. You can consider joining or creating a local stewardship group in your area. These groups can allow collaborative discussion and work which can help you protect the lake and your properties together.

Some lake stewardship groups in the Athabasca watershed include:

- Baptiste and Island Lakes Stewardship Society (BAILS)²³
- Lac La Nonne Enhancement and Protection Association (LEPA)²⁴
- Healthy Waters Lac La Biche²⁵

More stewardship groups are listed on the Alberta Lake Management Society (ALMS)²⁶ website and other groups may not be listed but may be active in your area, so look out for any groups or projects happening in your community. By collaborating and working together, we can all help to protect and restore our local lake environment and continue to enjoy all the benefits our shorelines give to our lakes.

FOR MORE INFORMATION

For easier access to digital links in this document, please know that an online version of this factsheet is available at <https://awc-wpac.ca/athabasca-watershed-shorelines-initiative/>.

If you would like to talk to someone about your riparian area, or a potential project your thinking of undertaking, please feel free to contact us at:

Athabasca Watershed Council
Healthy Shoreline Initiative Project Coordinator
science@awc-wpac.ca
780-213-4550

²³ Baptiste and Island Lakes Stewardship Society: <https://bails.ca/>

²⁴ Lac La Nonne Enhancement and Protection Association : <https://www.lepa-ab.com/>

²⁵ Healthy Waters Lac La Biche: <https://livinglakescanada.ca/project/lac-la-biche-region-watershed-stewardship-society/>

²⁶ Alberta Lake Management Society: <https://alms.ca/alberta-lake-stewardship-groups/>

ADDITIONAL RIPARIAN RESOURCES:

Topic/Source	Title	Link
Government of Alberta Legislation	Riparian Rights and Shoreline Modifications - Facts at Your Fingertips	https://open.alberta.ca/publications/riparian-rights-and-shoreline-modifications
	Public Lands Act and Water Act: Shoreline/Water Body Modifications	https://open.alberta.ca/publications/public-lands-act-and-water-act-shoreline-water-body-modifications-facts-at-your-fingertips
	Shorelands Approvals and Regulatory Requirements	https://www.alberta.ca/shorelands-approvals-and-regulatory-requirements.aspx
	Water Legislation and Guidelines	https://www.alberta.ca/water-legislation-and-guidelines.aspx
	Disturbance standard for temporary seasonal docks and other mooring structures for personal recreational purposes:	https://open.alberta.ca/publications/disturbance-standard-temporary-seasonal-docks-mooring-structures-personal-recreational-purposes
	Respect Our Lakes: Lake Legislation	https://bails.ca/BAILS/Respect%20Our%20Lakes%20-%20Lake%20Legislation%20in%20Alberta.pdf
Cows and Fish	Riparian Health Assessment for Lakes and Wetlands Field Workbook	https://cowsandfish.org/wp-content/uploads/2022/05/LakesandWetlandsRHAWorkbook2020-1.pdf
	Caring for The Green Zone: A User's Guide to Health	https://cowsandfish.org/wp-content/uploads/ugfull.pdf
	Riparian Health Assessment	https://cowsandfish.org/riparian-health/
Riparian Web Portal	Lakeshore Owners	https://www.riparianresourcesab.info/lakeshore-owners
	Measuring Health	https://www.riparianresourcesab.info/measuring-health
Alberta Conservation Association	Riparian Conservation	https://www.ab-conservation.com/featured-projects/land/riparian-conservation/
	Caring for Shoreline Properties	https://open.alberta.ca/dataset/2291206
Alberta Onsite Waste Management Association	Homeowners Resources	https://aowma.com/home-owners/
Responsible Recreation	Wheels Out of Water	https://www.alberta.ca/assets/documents/ep-recreation-wheels-out-of-water-poster.pdf
	Clean, Drain, Dry	https://www.alberta.ca/clean-drain-dry-your-gear.aspx
Alberta Species	Alberta Invasive Species Council	https://abinvasives.ca/

Topic/Source	Title	Link
	Alberta Native Plant Council	https://anpc.ab.ca/
Alberta Lake Management Society	Information Resources	https://alms.ca/information-resources/
Association of Summer Villages of Alberta	Lake Stewardship Reference Guide	http://www.asva.ca/uploads/2/9/2/1/29211923/asvalakestwrshpguidewholedoc.pdf
Alberta Low Impact Development Partnership	Tools for Achieving Lower Impact	https://www.alidp.org/resources/the-lid-toolbox/tools-for-achieving-lower-impact
Land Stewardship Centre	Green Acreages Primer	https://www.landstewardship.org/public/download/files/201554
Funding & Conservation Easements	Green Acreages Program	https://www.landstewardship.org/enable/programs/green-acreages
	Ecological Gifts Program	https://publications.gc.ca/collections/collection_2021/eccc/cw66/CW66-157-2021-eng.pdf
	Conservation Easements in Alberta	https://www.ce-alberta.ca/
Stewardship Groups	Baptiste and Island Lakes Stewardship Society (BAILS)	https://bails.ca/
	Lac La Nonne Enhancement and Protection Association (LEPA)	https://www.lepa-ab.com/
	Healthy Waters Lac La Biche	https://livinglakescanada.ca/project/lac-la-biche-region-watershed-stewardship-society/
	Wabamun Watershed Management Council (WWMC)	https://www.wwmc.ca/
	Pigeon Lake Watershed Association (PLWA)	https://www.plwa.ca/
	Alberta Lake Management Society (ALMS)	https://alms.ca/alberta-lake-stewardship-groups/