Village Of Stirling

Landscaping, Planting, & Water Conservation Guide

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Water Conservation & Water-Wise Planting

Did you know that your yard could play a critical role in conserving water and supporting local ecosystems? As droughts become more frequent and water conservation becomes essential, we can all make a difference by rethinking how we garden and landscape. By choosing drought-tolerant and native plants, we reduce water usage, lower maintenance needs, and help our environment thrive. Imagine the impact if every yard in our community made these small but meaningful changes. Together, we can create a landscape that's resilient, sustainable, and beautiful. Do you want to reduce your water usage, save money, and create a thriving habitat for pollinators and wildlife, all while keeping your garden beautiful and low maintenance? Ready to make a change or plan future projects? Let's explore how small adjustments to your landscaping and gardening practices can greatly impact the environment and our community.

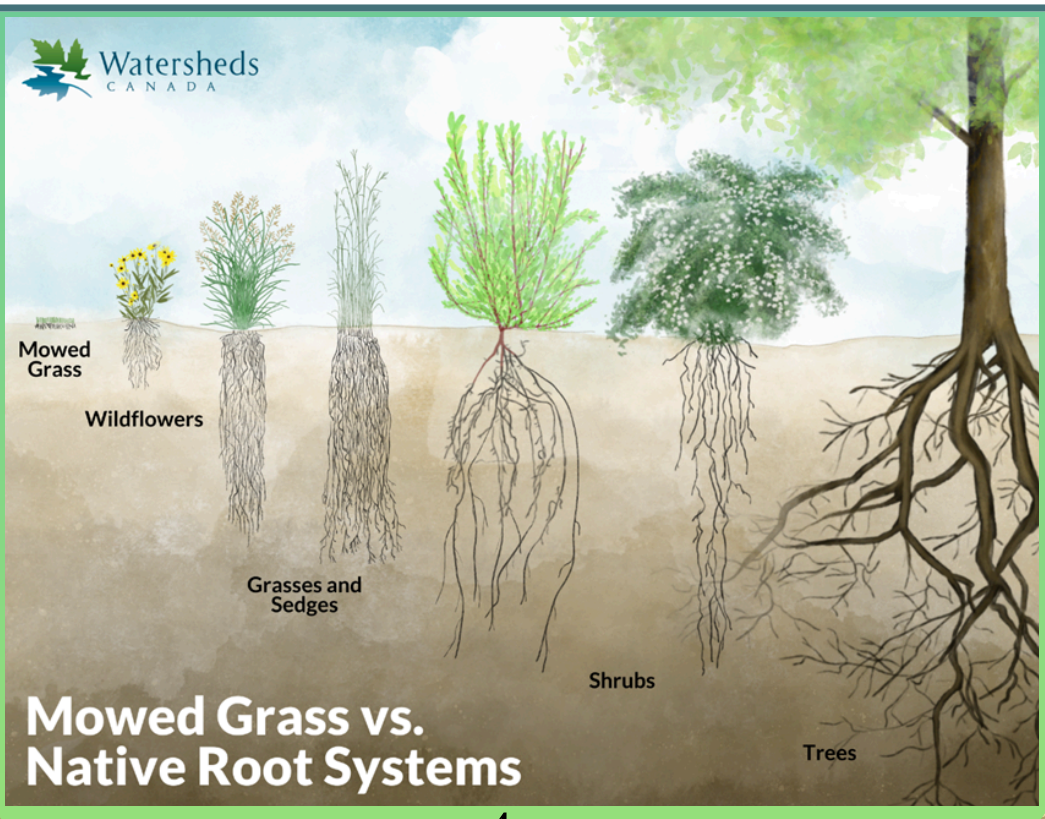
Switching To Drought-Tolerant & Native Plants

Why Make The Change Planting Drought-Tolerant Or Native Plants?

- Drought-tolerant plants require up to 40-60% less water.
- Native plants require up to 80% less water than non-native plants due to an efficient root system and their ability to adapt naturally to local conditions.
- Overwatering landscapes accounts for nearly 30% of household water waste.
- Up to 40% of household water use in the Canadian summer goes toward outdoor lawn care.
- Pollinators like bees, butterflies, and hummingbirds depend on native plants, which provide essential food and shelter.

What If I Already Have An Established Lawn?

You can gradually change your lawn by finding a native grass seed mix for your region and mixing it in with your existing grass seed. This provides a boost to your current lawn and will help reduce your watering needs in the long-term. Native grasses are also great for wildlife (including pollinators), have deeper root systems which absorb more water and reduce soil erosion, and do not require fertilizers and pesticides to maintain.



Drought-Tolerant & Native Plants Southern Alberta

Which Plants Are Best Suited For My Area?

Here are some interactive links below for in-depth booklets and charts on plants best suited in Southern Alberta.

- 50 Best Plants for Prairie Urban Gardens in Southern Alberta
- Native Prairie Plants of Southern Alberta Available for Drought-proof Gardening
- Tree Guide Lethbridge, Alberta

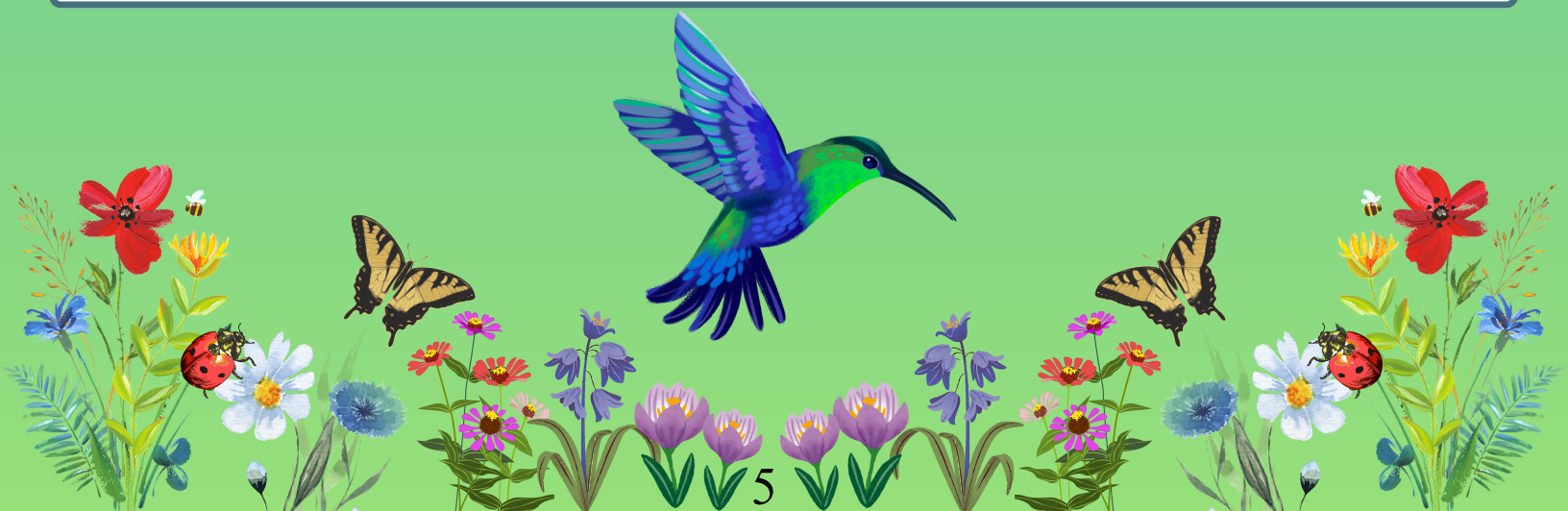
Where Can I Purchase Plants Best Suited For My Area?

Check out your local greenhouses and nurseries! They often carry native and drought-tolerant varieties suited to our region, and you'll be supporting local businesses while creating a beautiful, resilient landscape.

I Want To Expand My Search & Potentially Order Plants.

Here are some helpful links to websites where you can explore and purchase a variety of plants. Take a moment to browse and find the perfect additions to your landscape or garden!

- ALCLA Native Plants
- Wild About Flowers
- Sunshine Seeds Ltd.
- TreeTime



Landscaping

Choose Your Type Of Landscape!


Zero-Scape

Zero-Scape: A simple landscape, with stones or mulch, and has little or no plants. If you add plants, your yard will be made of gravel, regular soil, and possibly a few plants here and there. Zero-scape yards are plain, but if you want one of the cheapest, low-maintenance landscape options, zero-scape is your best choice.


Xeriscape

Xeriscape: A green garden that preserves the environment. Xeriscaping can help reduce water usage by up to 50-75%, using native, drought-tolerant plants. Xeriscape is an organized landscape design that focuses on using native plants or plants that are drought tolerant.

How Do I Accomplish A Xeriscape Landscape?

Want to learn more about how to execute a Xeriscape Landscape? Here is an in-depth resource to get you started.

- Xeriscape The Seven Principles Of Landscape Water Conservation

Planting

Things To Consider When Planting

1. Understand Your Yard:

Take the time to assess your yard's microclimates. Identify areas with full sun and dry conditions, as well as spots that receive more natural water or shade during the hottest parts of the day. Observe which areas lose snow first—these will likely be the hottest, driest in summer, while spots where snow lingers longer may have full or partial shade.

2. Choose The Right Plant For The Right Place:

In xeriscaping, it's essential to choose plants that can thrive on natural rainfall and snowmelt, minimizing the need for additional watering. Unlike traditional gardening, where you can push a plant's limits with extra care (especially in terms of water), xeriscaping focuses on sustainability. Watering should be done early in the morning or evening to reduce moisture loss through evaporation.

3. Use Natural Wood & Bark Chip Mulch:

Apply a 3" depth of mulch or bark chips for landscaping. Ensure mulch is kept 3"-5" away from young plants, wildflowers, and shrubs, and 8"-12" from mature tree trunks. Proper mulch placement ensures the root system can access air and water without suffocating plant growth. Organic mulch helps retain moisture and reduces weeds, lasting 4-6 years, but may require replenishment every 1-2 years. Avoid dyed or recycled rubber mulches. For river rock, a 2" depth is recommended, but note that rocks don't offer the same benefits to plant growth as mulch.

4. Soil pH Considerations:

Consistent use of the same type of mulch, especially pine bark (which has a pH of 3.5 to 4.5), can acidify the soil over time, making some nutrients less available to plants. Fresh or non-aged mulches may also cause nitrogen deficiencies in young plants, as decomposing bacteria require nitrogen to break down the mulch. To avoid this, use mulch that is at least one year old to minimize nutrient depletion.

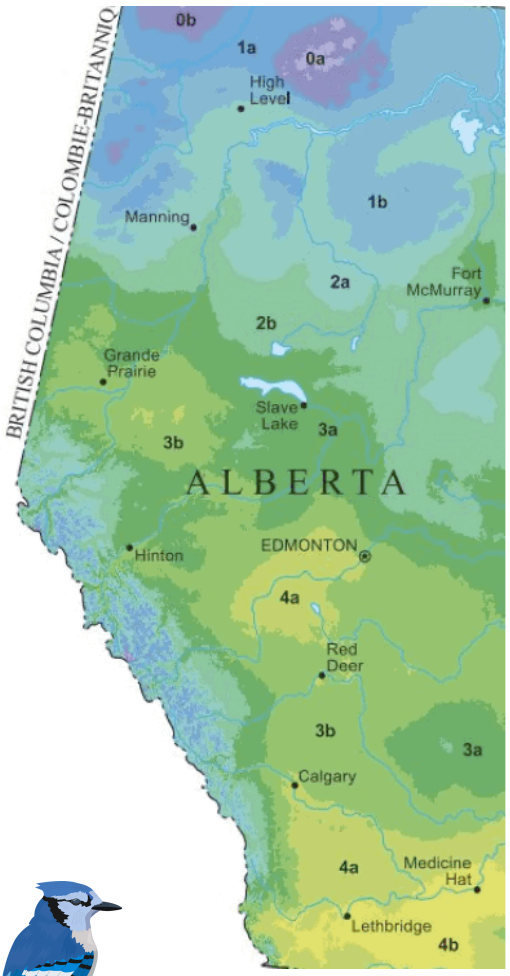
Choosing The Right Plants For Your Climate

Plant Hardiness Zones:

Your zone number indicates which plants are best suited to the climate in your area. It's important to choose plants that can tolerate cold temperatures, as Canadian winters can be harsh. While temperatures may rise occasionally, the bitter winds can make it feel much colder. Selecting cold-hardy plants will help ensure your garden thrives, even through the toughest winter months.

Soil Zones:

Soil zones, as defined by the Canadian System of Soil Classification, are broad areas where a particular type of soil predominates. These zones are named according to the dominant soil classification found within each area.



Zone	Coldest Temp. Range
0a	> -54°C
0b	-54°C to -51°C
1a	-51°C to -48°C
1b	-48°C to -46°C
2a	-46°C to -43°C
2b	-43°C to -40°C
3a	-40°C to -37°C
3b	-37°C to -34°C
4a	-34°C to -32°C
4b	-32°C to -29°C
5a	-29°C to -26°C
5b	-26°C to -23°C
6a	-23°C to -21°C
6b	-21°C to -18°C
7a	-18°C to -15°C
7b	-15°C to -12°C
8a	-12°C to -9°C
8b	-9°C to -5°C
9a	-5°C to -3°C

Extra Information!

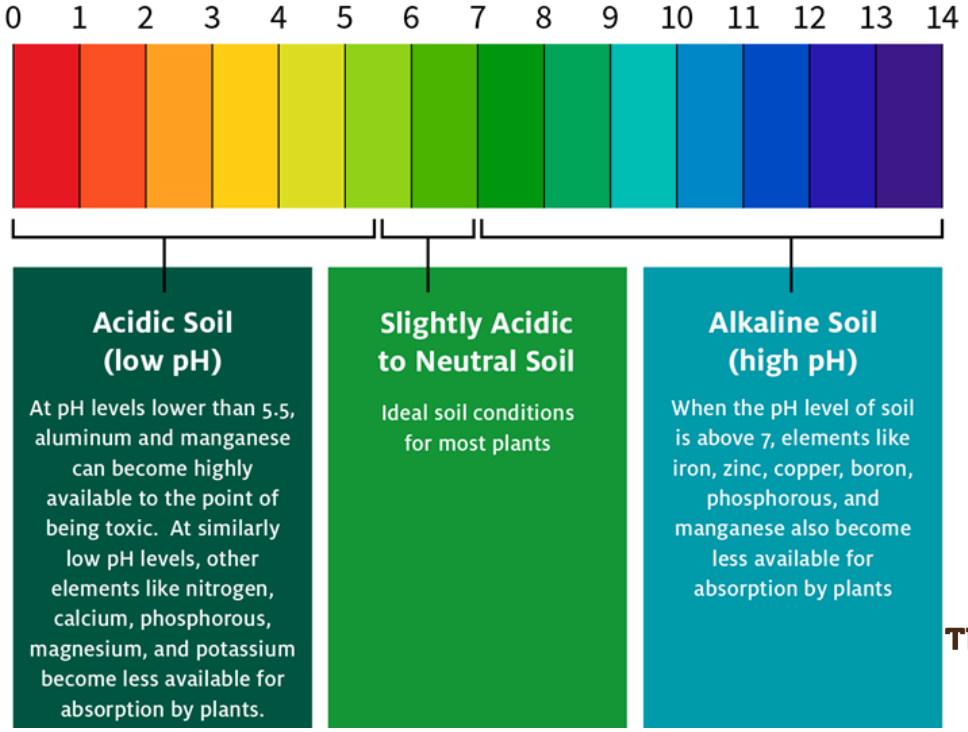
An overview of plant hardiness zones, soil types, soil analysis methods, and other key factors for optimal plant growth.

- Canada's Plant Hardiness Zones
- Soil Zones of Alberta
- Soil Group Map of Alberta
- GOC Terminology for Describing Soils
- Soil Texture of the Agricultural Area of Alberta
- Recommended Methods of Soil Analyses

Soil Acidity & Alkalinity

Understanding Soil pH For Better Plant Growth

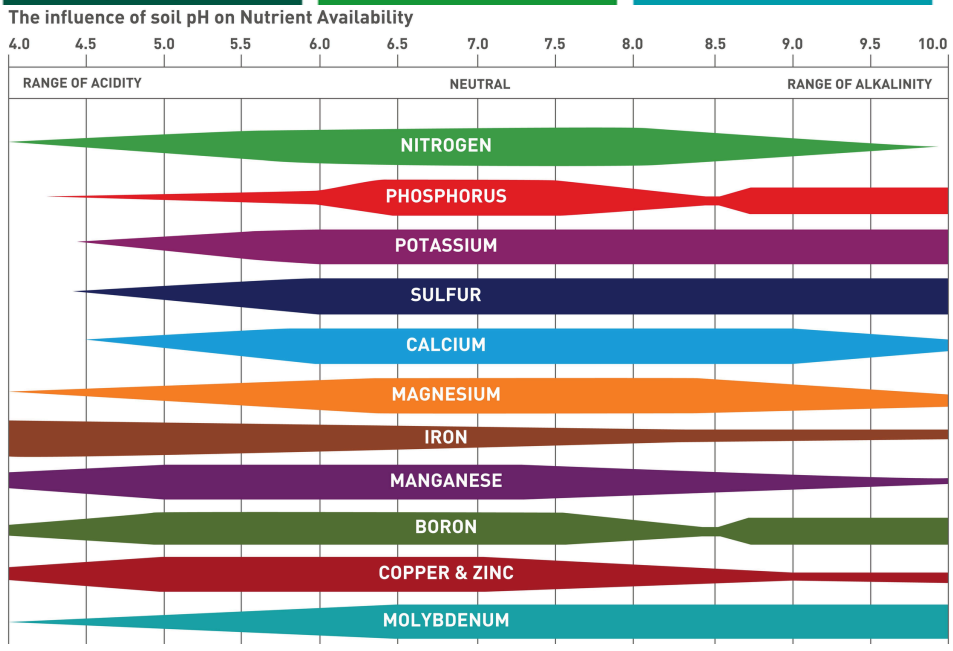
Soil pH is an important factor for plant health, as it affects how well plants can absorb nutrients. In drier areas like ours, soil pH often ranges from 6.5 to 9. Plants thrive best within specific pH ranges, so choosing the right plants for your soil type is essential for success. By understanding your soil pH, you can help ensure your plants have access to the nutrients they need to flourish in our unique climate.

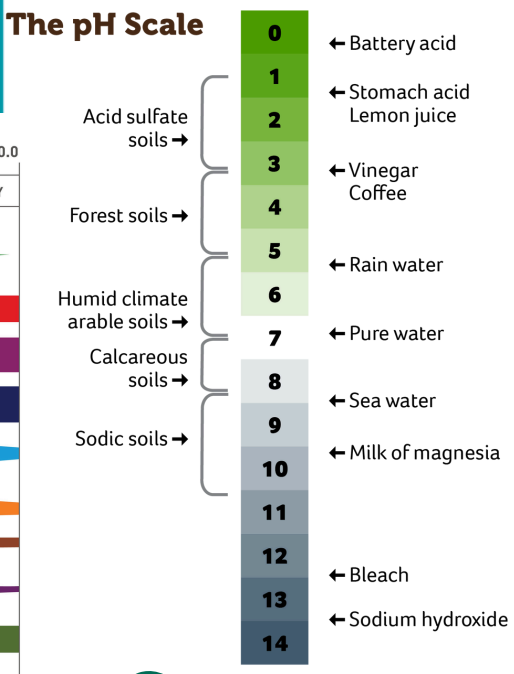


How Does pH Affect Plant Health?

Want to learn more about soil pH and plant nutrients? Here is an depth resource to get you started.

- Soil pH and Plant Nutrients





Southern Alberta's Climate & Soil Insights

Southern Alberta Climate & Soil Type

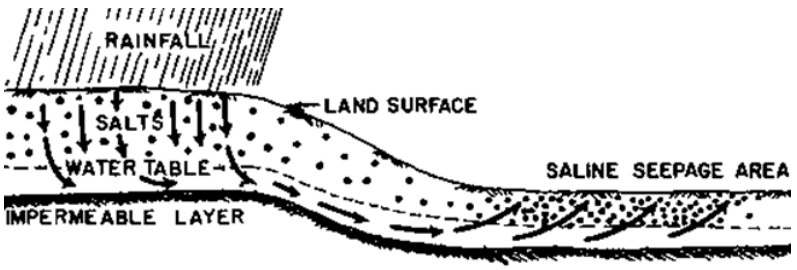
Climate:
Southern Alberta experiences a semi-arid climate, characterized by low precipitation, dry winds, and significant temperature fluctuations between seasons.

Soil Types:
Soils in southern Alberta vary widely, from fertile loams in river valleys to more challenging clay, sandy, or saline soils. These variations affect water retention, nutrient availability, and overall plant health.

Saline Soils:
Saline soils contain high levels of soluble salts, such as sodium, calcium, and magnesium sulfates, which increase the soil's electrical conductivity. In the County of Warner, sodium and magnesium sulfates are common, originating from the Bearpaw bedrock formation. *High salt concentrations hinder a plant's ability to absorb water and nutrients, and can increase toxicity from other elements, like aluminum.* Saline seeps occur when groundwater moves salts to discharge areas, typically forming in wet years followed by dry conditions, where evaporation exceeds precipitation. *Overwatering can cause salty groundwater to reach the upper soil layers and, thus, supply salts to the root zone.* Saline soils are often visible by a white crystalline crust on the surface, but may also be "invisible." The salts affect the physiological development of the plants impacting plant growth.

Managing Saline Soils:
To manage saline soils, it's crucial to control saline seeps by addressing groundwater movement. Effective strategies include:

- Planting deep-rooted forages in recharge areas
- Growing salt-tolerant forages in discharge areas
- Practicing continuous cropping
- Using subsurface or tile drainage



Overwatering

The Consequences Of Overwatering!

Overwatering causes soil to become waterlogged, depriving plant roots of oxygen, which leads to root death and reduced plant vigor. *Rather than promoting growth, overwatering results in slow, stunted growth and yellowing leaves.* Plants may also experience leaf scorch or burn.

Excess moisture creates an environment where harmful soil organisms thrive, leading to plant death. Additionally, fertilizer applied during overwatering is often washed away before it can be absorbed, polluting groundwater.

Leaf burn can also result from watering plants in hot, sunny conditions. Water droplets on leaves act like magnifying glasses, intensifying sunlight and causing the leaf to overheat and burn. Overwatering can lead to edema, a condition where excess water causes internal pressure in the leaf, resulting in ruptured cells and causing discoloration and dryness.

For trees, overwatering can cause lesions and blister-like marks on leaves, which may spread and lead to premature leaf drop. In severe cases, overwatered trees cannot support new growth, causing shoots to die. Proper watering and care are essential for plant and tree health.

Root rot will have a swampy, sewage, sulphurous (rotten egg), or ammonia smell.

Extra Information!

A look into urban water dynamics and insights on edema.

- Urban Balance Water Study Lethbridge, AB
- University of Saskatchewan Edema

Watering

Devices To Save Water & Reduce Waste

Timers: Timers help control water usage and reduce manual labor. They can be used with a hose, but they are more effective when paired with an underground irrigation system.

Soaker Hoses: Soaker hoses are more efficient at delivering water evenly across the soil, ensuring that water reaches the root system while minimizing evaporation in areas where it's not needed.

Drip Irrigation Systems: These systems deliver water directly to the base of plants, minimizing waste through evaporation and misdirection. Drip irrigation waters slowly over extended periods, allowing water to penetrate deeply into the root zone and cover a broad area.

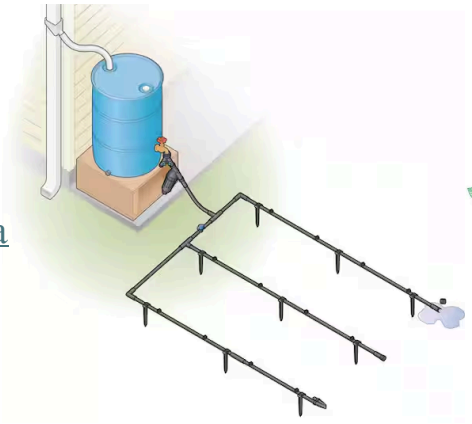
Underground Irrigation: Underground systems are fully automated and customizable, requiring little user input. However, they need regular maintenance and may still experience water loss due to evaporation or wind drift.

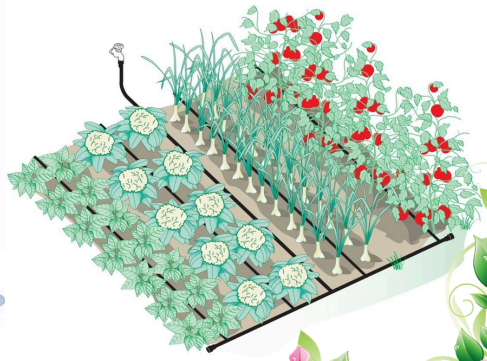
Rain Barrels & Solar-Powered Pumps: Rain barrels, combined with solar-powered pumps, can power a timed drip system to water pots and plants in garden beds. Rain barrels and watering cans can also be used regularly to water newly planted shrubs and potted plants. A drip irrigation system can be paired with a solar rain barrel to direct water to specific areas.

Where Can I Purchase Watering Devices?

Here are some helpful links to websites where you can explore and purchase various watering devices. Take a moment to browse and find what is best suited for your needs!

- Southern Irrigation
- Lee Valley
- Irrigatia
- Irrigation Direct Canada





Rainwater Harvesting

How Rainwater Harvesting Can Cut Costs & Boost Sustainability

Provincial codes and regulations in Alberta permit the use of rainwater for non-potable purposes, such as flushing toilets and urinals, as well as for sub-surface irrigation systems.

Collecting and using rainwater as a replacement for municipal water can help reduce water bills. Additionally, reducing municipal water use for purposes like irrigation eases the burden on local treatment and pumping systems.

Widespread adoption of rainwater harvesting within a municipality's service area can decrease long-term water development needs. This allows cities to utilize their existing water infrastructure more efficiently.

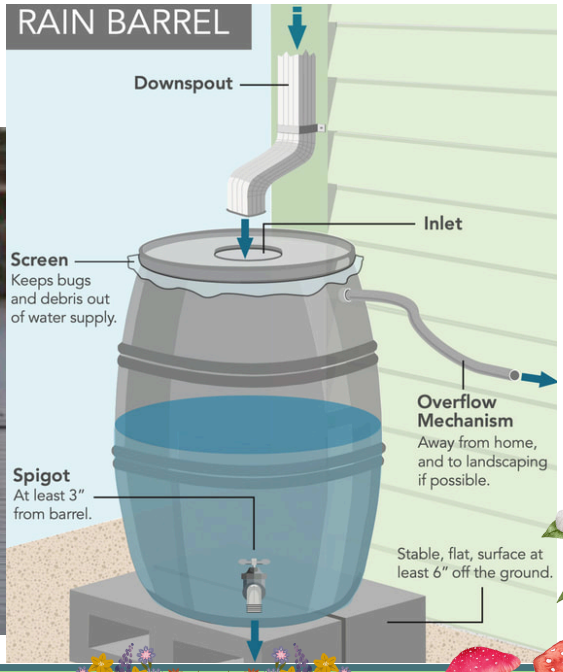
Rainwater Collection Calculation Formulas & Equations:

•Roof Area (ft2) x Precipitation Amount (in) x 0.623 = Amount Collected (gallons)
•Roof Area (m2) x Precipitation Amount (mm) = Amount Collected (liters)
•Easy Formula to Remember: *1″ of Rain on a 1,000 sf Roof Will Yield 623 Gallons*

Getting Started Harvesting Rainwater

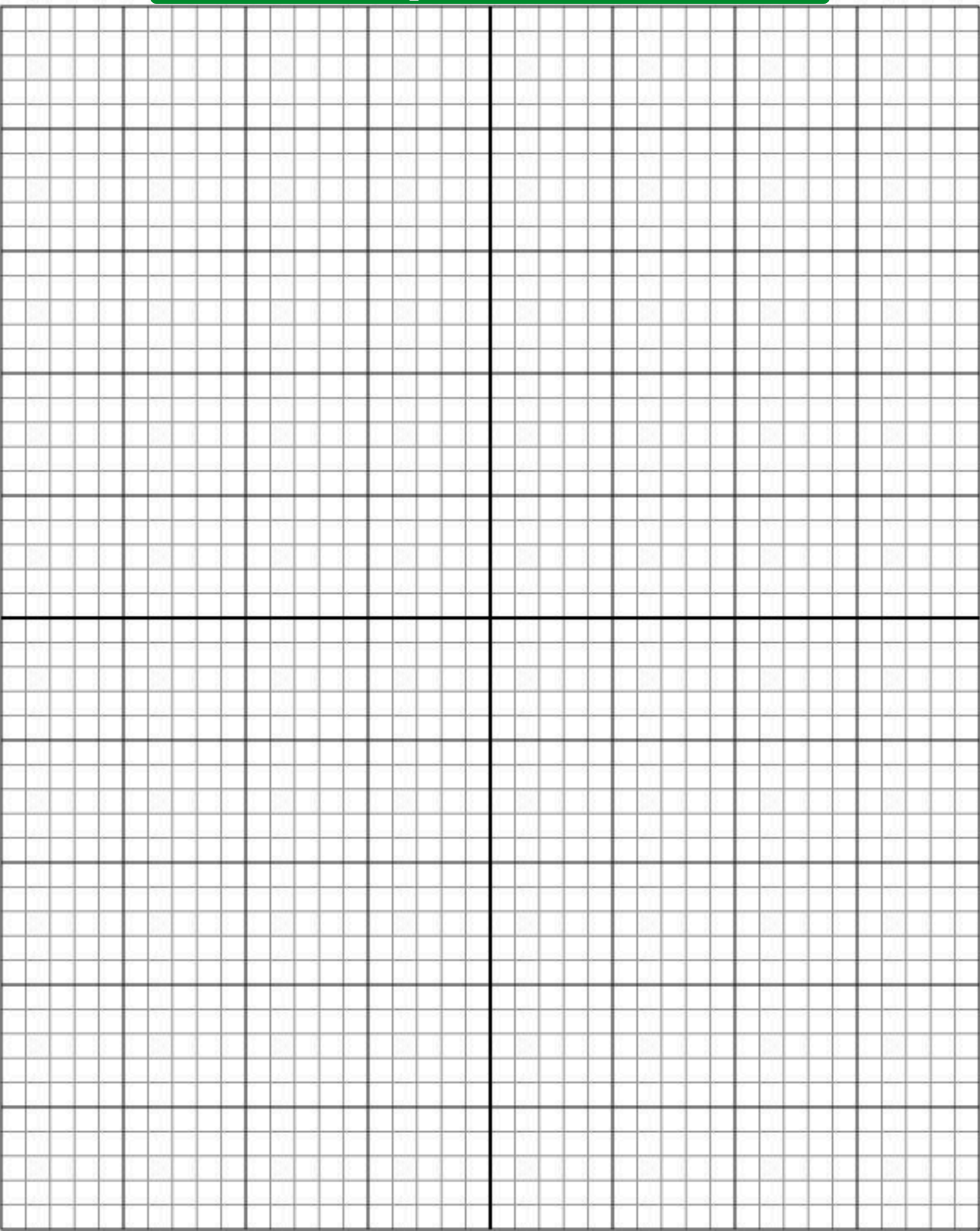
Here are some helpful links to help get you started on how to harvest rainwater!

- Alberta Guidelines for Residential Rainwater Harvesting Systems
- Rainwater Harvesting
- HGTV Building a Rain Barrel System



Map Your Lawn

Map Your Garden



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