

A colorful illustration of a workshop and garden scene. On the left, a wooden workbench holds two potted plants with rounded green tops. Above the workbench, a pegboard is filled with various tools including wrenches, pliers, a shovel, and a pair of orange gloves. In the bottom left corner, a small blue dog is curled up and sleeping. To the right of the workbench, a shovel and a broom lean against a wooden fence. In the background, a garden path leads to a white picket fence, with rolling green hills and a blue sky with white clouds visible beyond.

WATER SMART BOZEMAN.

Spring/Summer 2021

WATER SMART PLANTING GUIDE

for the Bozeman Area

CITY OF **BOZEMAN**
WATER CONSERVATION

DOING ONE THING MAKES A DIFFERENCE.
FIND OUT MORE AT BOZEMANWATER.COM

Water Smart Bozeman

What does Water Smart Bozeman mean? It means:

- Understanding where our water comes from
- Recognizing that there is a limited supply
- Acting to conserve it

At the City of Bozeman, we're dedicated to providing the tools and resources for you to make water smart decisions both inside and outside your home. **With 50% of Bozeman's summer time water use going to lawns and landscaping**, the easiest and best place to start is right outside your door.

Use this guide to get water smart—with tips for your ground and your grass, as well as irrigation insights and yard makeover inspiration. Then, take advantage of the City of Bozeman's water conservation incentives to transform your yard from thirsty to thriving.

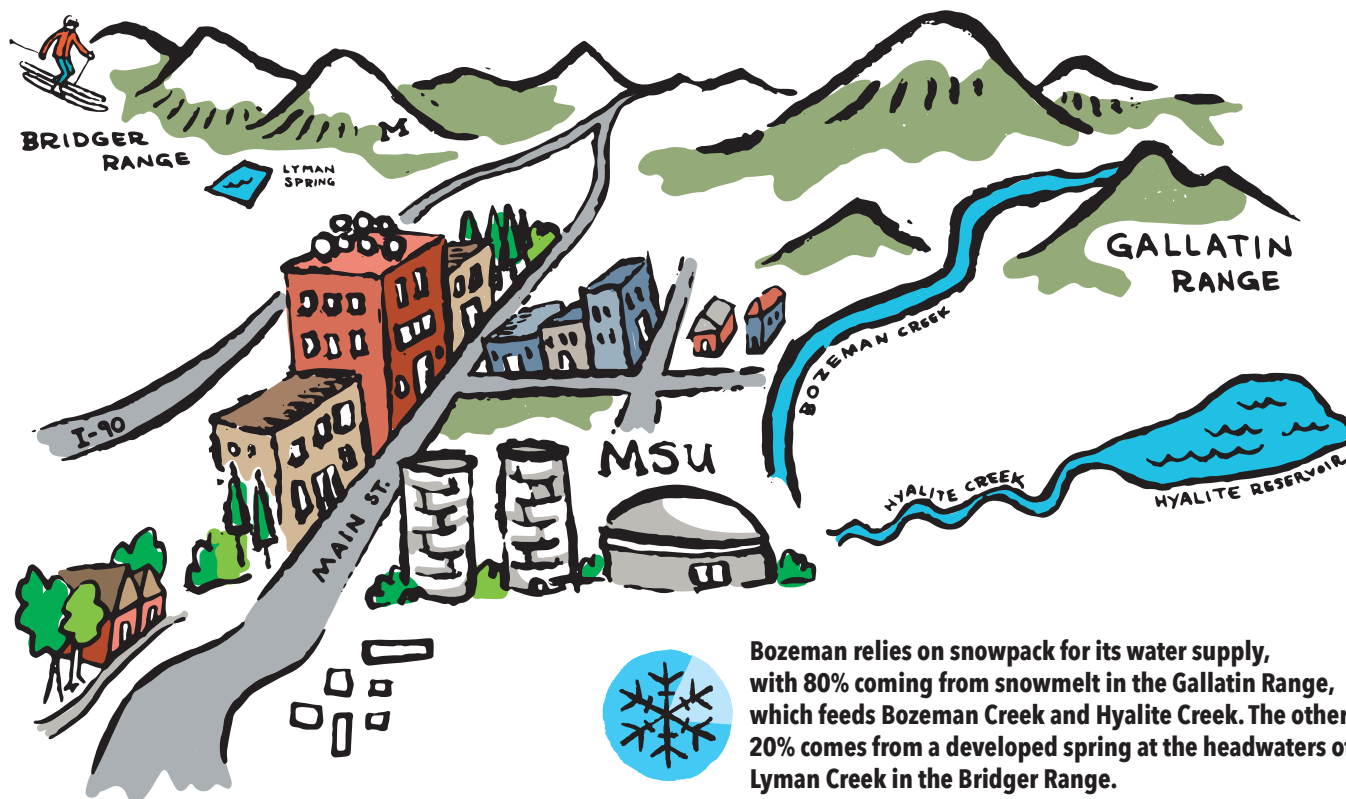
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Where Bozeman's Water Comes From



Bozeman enjoys extremely high-quality water, but quantity is limited. With only 16 inches of average annual precipitation, Bozeman is considered semi-arid and drought-prone.



Bozeman relies on snowpack for its water supply, with 80% coming from snowmelt in the Gallatin Range, which feeds Bozeman Creek and Hyalite Creek. The other 20% comes from a developed spring at the headwaters of Lyman Creek in the Bridger Range.

Bozeman's Limited Water Supply

With shifting climate patterns, our water supplies are likely to become less reliable. More moisture is predicted to arrive as rain instead of snow in coming years, and warmer temperatures are expected, potentially leading to earlier peak flows and drier summers. Plus, Bozeman is booming, growing at a rate far above the national average. More people will need more water, and eventually, these supplies won't be enough.

Without water conservation, Bozeman could be facing a water shortage within the next 15 years. The City's Water Conservation Program is helping residents save water by using it more efficiently, creating the single largest source of water for Bozeman's future.



Acting to Conserve Our Water Supply

We can't make more water. Taking action now to conserve what we have is the cheapest, most expedient, and environmentally-friendly way to thrive through drought and ensure a reliable water supply for the future. And all it takes to help is doing one thing to reduce your water use.

DOING ONE THING MAKES A DIFFERENCE

In big ways and small, we can all do one thing to conserve Bozeman's limited water supply. When it comes to reducing water use in your yard, maybe you already have a green thumb. Your 'one thing' might mean overhauling your entire landscape with drought-tolerant plants. Or maybe you're a little green behind the ears in your yard. Your 'one thing' could be as simple as calling for a free sprinkler system assessment.



Whether big or small, know that by doing one thing, you're making a difference. Plus, your yard, your wallet, and your thumb will all get a little more green.

INCENTIVES

Saving water also saves money. Cash in on your water smarts through our many rebates, offers, and incentive programs. Start with our Landscape and Sprinkler System Rebate Program (page 15), then check out all of the incentives we offer—both residential and commercial—at bozemanwater.com.

City of Bozeman
**REBATE
PROGRAM**

ENGAGEMENT

The City of Bozeman has created a variety of community water conservation programs for everyone to participate in together. Here are a few:

- **Sprinkler System Assessments.** Assessments provided throughout the summer for FREE, go to page 13 for details.
- **Shower Better Month.** Join us in October, and look for information on how to pick up a FREE high efficiency showerhead for your shower.
- **FREE Kits*.** Available through the City of Bozeman. They're free, but they go fast, so contact us today.
 - **Kids Activity Kits.** Pick up a shower better or brush better kit, along with the kids activity sheet to make conservation fun and educational.
 - **Summer Savings Tool Kit.** FREE kit with tips and tools to save money on your outdoor landscape. Available all summer, see page 10 for details.
 - **Fix-a-Leak Kit.** FREE kit with basic items and instructions to find and fix leaks inside your home.

You can also **download the Dropcountr app** to track your water use and find more ways to save around your house throughout the year. See back cover for more information.

TIPS

You can be water smart anywhere—indoors, outdoors, at home, or your business. While this guide is dedicated to tips for outdoor residential water conservation (starting on page 6), our website bozemanwater.com is the source for water smart ideas for everything from efficient irrigation schedules to commercial urinals.



*Kits are available at 20 E Olive St. While supplies last.

We're Doing Our Part

The City of Bozeman is leading by example with these Water Smart efforts:

MUSEUM OF THE ROCKIES DEMO GARDEN



Visit this summer for inspiration and ideas.

The City of Bozeman has partnered with MSU and the Museum of the Rockies to showcase efficient irrigation techniques and a variety of water smart and native, drought-tolerant plants. Educational signs and brochures provide information on the maintenance needs of water-wise plants, drip irrigation, and the design approach for each bed. Stroll around the gardens for inspiration, gather information and pick up a plant list to create your own water wise garden!

WATER WISE DEMONSTRATION GARDEN

MIXED SHRUB AND PERENNIAL GARDEN

The City of Bozeman has partnered with Montana State University and the Museum of the Rockies to showcase efficient irrigation techniques and drought-tolerant plants.

WATER WISE PLANTS

These plants are drought-tolerant and require minimal watering. They are also native to Montana and are easy to maintain.

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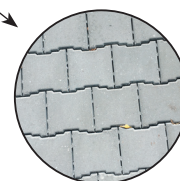
CITY HALL'S WATER SMART GARDEN

The City of Bozeman is inspiring change with drought-tolerant plants and innovative stormwater treatment, right in front of City Hall. Once established, the drought-tolerant plants will live off naturally-occurring precipitation, while the water smart plants will only need occasional supplemental watering. To find out more about these plants, see our plant guide beginning on page 20.



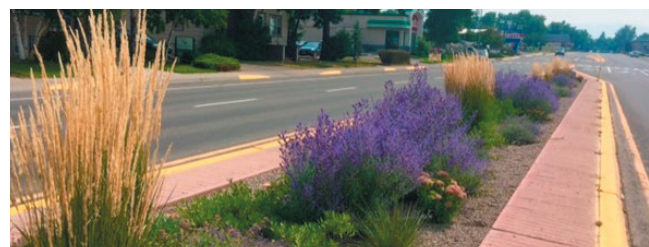
Even our concrete paves a better way.

Permeable pavers in front of City Hall—a coordinated effort between Bozeman's Water Conservation and Stormwater Divisions—allow water to move into the ground instead of toward the edges of the hardscape. The interlocking grid guides stormwater through the spaces between them, filtering pollutants while reducing runoff.



NORTH 7TH AVENUE MEDIAN

Bozeman is on the road to a water smart future. Drought-tolerant perennials and grasses in the medians on North 7th Avenue between Aspen and Villard not only add a splash of color to your commute, they also use 80% less water than turf grass medians.



This summer, drought tolerant landscaping will be installed in street medians along N. 27th Avenue between Oak Street and Baxter Lane.

Check out the native grass seed mix and perennial plants over the next couple summers to see how quickly they grow - and thrive - with little water use!

What About Drought?

Drought is a very real thing here in Bozeman. We are a semi-arid and drought prone area, with only 16 inches of precipitation annually. Additionally, Bozeman's water supply is limited and relies on snowpack as shown on page 2. In the future, warmer temperatures may lead to more moisture arriving as rain instead of snow, earlier spring snowmelt and peak flows and drier summers.

Reduced snowpack during our winter months could result in insufficient water supplies for spring, summer, and into the following fall and winter. We want you to be prepared and in the know on Bozeman's drought conditions.

GOOD NEWS, WE HAVE A PLAN

The City of Bozeman has put together a Drought Management Plan that provides a framework to monitor for drought conditions, drought stages, and recommended actions for each stage. If and when a drought stage is declared by the City, residents and businesses may

be required to take action to ensure that we maintain a healthy water supply at every stage. We also have a drought surcharge that will go into effect and will vary by customer class, and for single homes, by water use tier levels. For more information about this surcharge visit www.bozemanwater.com and click the Drought Management button. Keep reading to learn what to expect during each stage of drought.

WHAT CAN I DO NOW?

Even when we aren't in a drought stage, conserving water is our best defense against drought. Doing even one thing can make a difference. Visit www.bozemanwater.com and click on the water conservation button for information about:

- Indoor rebates on WaterSense toilets, showerheads, and CEE Tier rated clothes washers.
- Outdoor rebates on sprinkler systems and plants (see page 15 and 20 in this guide for more information).
- Tips, kits, and other ways to save water now.

DROUGHT WATCH - STAGE 1

Water use guideline:

Conserving water is encouraged but is not mandatory.

Drought surcharge:

Expect a rate increase of 0-21%.

What you need to do*:

- We encourage everyone to pitch in and look for ways to save water in and around your home and business.
- Reducing outdoor water use is a great place to start.
- Reduce your water usage by 10%**.

DROUGHT ADVISORY - STAGE 2

Water use guideline:

Mandatory outdoor watering restrictions begin.

Drought surcharge:

Expect a rate increase of 10-47%.

What you need to do*:

- Reduce your water usage by 20%**.
- Outdoor watering may be limited to two days per week.
- Outdoor watering may be prohibited between 10am and 6pm.
- A City-wide watering schedule will be released.

DROUGHT WARNING - STAGE 3

Water use guideline:

Lawn watering ban is in effect and other outdoor watering is restricted.

Drought surcharge:

Expect a rate increase of 11-100%.

What you need to do*:

- Reduce your water usage by 30%**.
- Lawn watering may be banned.
- Existing trees, shrubs, and flower and vegetable gardens may be watered with hand held hose or low-volume, non-spray devices.
- Water fountains and filling of private swimming pools may be banned.
- Community gardens, athletic and playing fields will have assigned watering days and schedules.

DROUGHT EMERGENCY - STAGE 4

Water is rationed for essential uses only.

Drought surcharge:

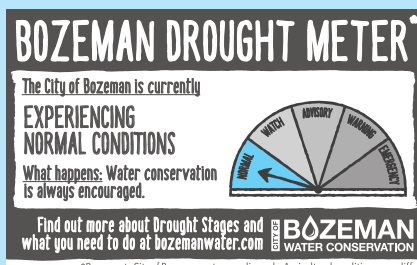
Expect a rate increase of 11-200%.

What you need to do*:

- Reduce your water usage by 40%**.
- Outdoor watering is not allowed.
- Use water for essential uses only.



KEEP UP TO DATE ON DROUGHT CONDITIONS



We're monitoring drought conditions and want to keep you in the know. The Bozeman Chronicle will publish the Bozeman

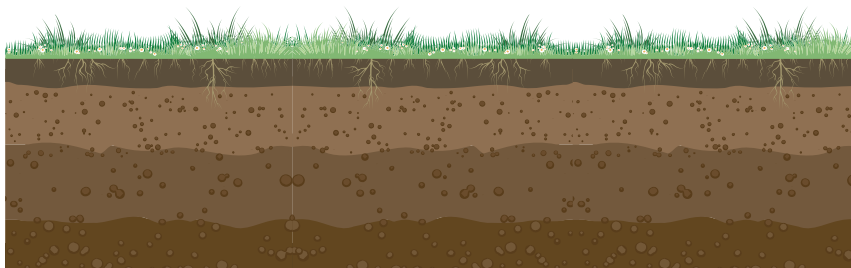
Drought Meter on the weather page every Friday throughout the summer. You can also gauge conditions at bozemanwater.com.

* Visit www.bozemanwater.com and click the Drought Management button for details on drought restriction guidelines for residences, businesses, and the City of Bozeman.

**The average Bozeman resident (one person) uses 111 gallons of water per day. Reducing your water use by 10% means using 11 less gallons/day; 20%=22 gallons/day; 30%=33 gallons/day; 40%=44 gallons/day.

Water Conservation From the Ground Up

Caring for the dirt below your sod and planting beds is the first step to both a healthier yard and water savings. So take stock of your soil, show it some love with amendments like DIY compost, and mulch your way to a happy, water-friendly landscape.



Understanding Soil

Gardeners worth their salt know that lawns and landscapes depend on good dirt. Knowing your soil type means knowing how to improve it—and that's the secret to efficient watering and gorgeous landscapes.

DIFFERENT TYPES OF SOIL

There are three common soil types: clay loam, sand loam and silt loam.

- **Clay loam** is sticky and easy to shape. It often requires sand and organic matter to improve its quality. Clay is the gluey "peanut butter" of soils, but it can dry to a hard, almost impermeable surface.
- **Sand loam** is visibly granular with no stickiness. It's gritty, like sugar. Most sand loam will break up easily even when wet.
- **Silt loam** is the happy medium between clay and sand loam. Its granules are smaller than sand but not as small as clay. It is smooth like clay but breaks apart like sand. This allows for just the right amount of water absorption and mineral retention.

Guess what Bozeman is built on? Mostly, clay loam. This heavy, fine soil prevents water from soaking in easily. If you water this type of soil too fast, the water pools and runs off into the street and storm drains, picking up all kinds of contaminants. This dirty water can end up in our streams.

In other areas of town, the soil can be extremely porous. Bottom line: you need healthy soil for a healthy garden, so it pays to know your dirt and water accordingly.

DETERMINE YOUR SOIL TYPE AND DEPTH

To find your soil type, place approximately one tablespoon of soil in the palm of your hand. Add water one drop at a time and knead the soil to break down all the larger pieces. You can identify your soil when the consistency feels like putty. Refer to the soil types listed above to discover yours. To maximize the health of your landscape, you'll want at least 4"-6" of topsoil before your shovel hits subsoil.

IMPROVE YOUR SOIL

Good soil has particles of varying sizes and shapes and organic materials which retain water, provide nutrients, and allow water to get to plant roots.

Once you know your soil type, make it even better:

1. Begin with deep spading, plowing or rototilling to a depth of about six inches to break up compacted soil.
2. While tilling, add organic matter such as compost or shredded leaves to beef up nutrition.
3. Add soil amendments, as needed, for your type of soil.

For more information about soil amendments, click on the Water Conservation button at bozemanwater.com.



Adding Compost

Compost is decomposed organic material, and plants love it. You can purchase it or make it yourself from leaves, lawn clippings, vegetable waste and coffee grounds. Compost improves air circulation in clay soils and nutrient retention in sandy soils. Plus, healthy plants in a well-composted landscape bed don't need to be watered as frequently.

Most soils can be improved by adding compost, which helps retain water in the soil and at plant roots. Compost can be added to flower beds and gardens and before installing sod or planting trees and shrubs. Compost can also be used as a top dressing on existing lawns.



DIY HOME COMPOSTING

Follow a recipe! Like baking cookies, composting requires that you know what ingredients, and how much of them, are needed.

Ingredient list:

- **Materials:** be sure to add the brown and the green! The 'brown' materials, or sources of carbon in the compost, are things like dead leaves, wood chips, and cardboard. The 'green' materials, or sources of nitrogen, are things like lawn clippings, vegetable waste and coffee grounds. The C:N (carbon to nitrogen ratio) should be about 30:1.
- **Microorganisms:** they are the cooks in the kitchen and do the dirty work! You can add worms, manure, or starters to get things going.
- **Oxygen:** needed for the microorganisms and speeds up the process.
- **Water:** the compost pile should be damp, like a wrung-out sponge.

All of these ingredients work together to get things cooking!

Make the Most of Your Mulch

Mulch holds water hostage. Most water evaporates before it ever reaches plant roots, but the addition of a 2- to 3-inch deep mulch barrier will help your trees, perennials and shrubs keep water right where it belongs.

BENEFITS TO ADDING MULCH TO YOUR LANDSCAPE

- Mulch helps hold in soil moisture.
- It helps protect soil from erosion on steep slopes.
- A well-mulched bed keeps weeds at bay.
- Organic mulch (wood chip, straw etc.) provides the soil with free nutrients.
- Mulch insulates and regulates soil temperature. Hot summer days won't scorch your plants, and those trees, shrubs and perennials will stay cozy during cold, fall evenings.
- Adding mulch can help create a finished appearance to your landscaping beds.

HOW TO MULCH SMARTER

1. Before adding mulch to bare soil—especially for newly planted shrubs and perennials—**make sure the soil that surrounds the plants' roots is moist.** This hydration kick-start will ensure roots do not dry out when rainfall is lacking.
2. **Mix all of your preferred mulch components together** before spreading it onto the soil. This ensures a balanced interaction with air, moisture, light and nutrients.
3. **Rake the full depth of a mulch layer at least once per season.** Some mulch, when regularly wet and exposed to extreme temperature changes, can grow mold if left unturned.
4. **Keep the depth of your mulch between two and three inches.** Adding too much mulch could risk the development of crown disease due to excess heat and moisture, so only add mulch to a planting bed if there is less than three inches in depth (after applying water). On the other hand, having too little mulch won't properly regulate temperature or control plant water stress, and the weeds may start creeping in.

FREE WOOD MULCH

In partnership with Gallatin County, the City of Bozeman is providing free mulch to residents. The City's Forestry Division will maintain a pile of free mulch at Gallatin County Regional Park (entrance off Oak St.) and the Gallatin County Fairgrounds (entrance off Oak St. near recycle bins). Free mulch will be available throughout the summer.

Planting Potential

Gone are the days of thirsty turf from fence line to fence line. With all we know about drought-tolerant grass and plants, Bozemanites are looking at their yards with new potential. Want a veggie garden? Or deer-tolerant shrubs? Maybe you want to attract butterflies? Or do you need some soft turf for the neighborhood badminton tournament? There are water smart solutions for every situation. So take a look out your window and envision the possibilities.

LESS WATER, LESS WORK, MORE VALUE

Choosing to landscape with drought-tolerant plants can cut your water use by 50 to 75%. Watering aside, drought-tolerant plants simply make gardening and landscaping easier. They need less maintenance, require no pesticides, and less fertilizing. Not to mention, switching to drought-tolerant plants can increase the value of your home.

WATER SMART BOZEMAN.

INCLUDE KIDS IN YOUR WATER SMART PLANTING EFFORTS.

Create water smart conservation habits for now and the future.



DOING ONE THING MAKES A DIFFERENCE.
FIND OUT MORE AT BOZEMANWATER.COM

Once you've identified your yard's water smart potential, check out the complete list of drought-tolerant and water smart plant inspiration on page 20. Here are a few other water smart possibilities to ponder:

LOW WATER USE EDIBLE PLANTS

By choosing low water use plants and developing a healthy garden you can still grow a variety of edible plants while being water smart.

- Plants with shorter growing seasons use less water by reaching maturity earlier than other plants with longer growing seasons. Some examples include radishes, beans, kale, lettuce, squash, some tomato varieties.
- Plants that develop deep root systems can draw moisture from deep in the soil long after the surface has become dry—tomato plants are a great example!
- Don't choose space hogs like broccoli and cauliflower that span over wide areas, require more water and don't produce as much.
- Herbs, herbs, herbs! Many herbs are very hardy and don't require a lot of water. Some of the best drought tolerant herbs include: Thyme, Oregano, Rosemary, Sage, Mint, and Chives.

BE A POLLINATOR PROPAGATOR

Add a little life to your yard by including bee and butterfly-friendly plants in your landscape plans. It's estimated that pollinators are responsible for every one in three bites of food we eat. Planting water smart species that naturally attract the buzz and flutter will not only add color and interest to your yard, it will help the sustainability of our food system. Want more inspiration? Visit Bozeman's Pollinator Garden at Langhor Park, just north of the intersection of South Tracy and West Mason.



TO SOD OR SEED?

Kentucky bluegrass, a common cool season grass installed in the Gallatin Valley, requires significant supplemental irrigation throughout the growing season to maintain a healthy appearance—especially in July and August when conditions are exceptionally hot and dry. If you are looking to install a water efficient landscape, consider installing drought tolerant seed or sod blends in high traffic areas to drought-proof your landscape and reduce outdoor water use.

Drought Tolerant Sod

Tall Fescue blend sod is a locally available drought tolerant cool season grass that requires less supplemental irrigation and overall maintenance than Kentucky bluegrass. Fescue blends tolerate heavy traffic, clay soils, are resistant to disease, and need less water to stay healthy.



Things to consider before installing Tall Fescue blended sod:

- Each Fescue blend sod is unique so keep an eye on your lawn health to make sure it is receiving the proper amount of water. Be aware, overwatering Tall Fescue blend sod can lead to disease that can disrupt your lawn's health over time.
- Tall Fescue blend sod should be mowed high – about 3" in height to maintain optimal color and resiliency.
- Tall Fescue blend sod is tolerant of sun and shade and generally outperforms Kentucky bluegrass in shady areas.
- Fescue has an extensive root system which allows for increased drought resilience if you have proper soil depth (6" depth is recommended).
- Tall Fescue may require overseeding in the fall after a stressful hot, dry summer.

Drought Tolerant Seed

Seeding your landscape is more cost effective than laying sod, and offers greater flexibility in choosing grass varieties to match your growing conditions and landscape values. Seeding with drought tolerant grasses also promotes deeper root growth because the grasses germinate and root in the same place, undisturbed.



After establishment, some drought tolerant seed mixes can survive without supplemental watering (except for extremely hot and dry conditions) and do not require regular mowing. Some options for this include:

- Sheep Fescue 'Covar'
- Fine Fescue Blends (hard, red and sheep fescues)
- Tuft Type Tall Fescue
- Native Streambank Wheatgrass

If you are seeking a more natural look for landscaped areas that are not exposed to traffic, bring the beauty of Montana's natural environment to your own yard by seeding with a native drought tolerant seed mix interspersed with wildflower seeds. Once established, they can survive without supplemental water and can be left to grow tall all season long.

WATER SMART BOZEMAN.

**MORE LAWN
PLANTING AND
MAINTENANCE TIPS
can be found at
bozemanwater.com.**



**DOING ONE THING MAKES A DIFFERENCE.
FIND OUT MORE AT BOZEMANWATER.COM**

Watering Your Lawn and Landscape

How much water does your yard need? What's the best way to get water to your grass and plants? Answer those two questions and you're well on your way to watering smart. In this section, you'll learn how to assess your irrigation system, as well as tips on adjustments and maintenance so you can make the most of every drop.

IS YOUR LAWN GETTING ENOUGH WATER?

If you step on your lawn and it doesn't spring back, it's time to water.

NEW LAWN WATERING

To efficiently establish new lawns, water as needed for up to 21 days. After 21 days, routine watering can be reduced to three days per week or less, between 4am and 8am.

TREES, SHRUBS, AND PLANTS HAVE DIFFERENT WATERING NEEDS THAN LAWNS

- Trees have deeper root zones and require more water than turf grass, shrubs and perennials. But, tree root zones also store lots of water, so they can be watered less frequently.
- Trunks and leaves do not carry water to the roots of trees or shrubs. Deliver water to the edge of the leaf canopy, known as the drip line, which is where the roots absorb the most water.
- Shrubs and perennials like deep but infrequent watering.
- Cluster plants with similar watering needs together in the same zones to avoid over and under watering.

MULCH HOLDS H2O HOSTAGE

Most irrigation evaporates before it ever reaches plant roots. A 2 to 3-inch mulch barrier around trees, shrubs, and perennials helps them hold onto water. For more information on mulching, refer to page 7, and don't forget to take advantage of the City of Bozeman's free mulch program, offered throughout the summer at the Gallatin County Regional Park and the Fairgrounds entrance off Oak Street.



DRIP YOUR WAY TO MORE GREEN

Drip systems deliver water directly to landscape plants, minimizing water lost to evaporation. They are also great for mulched beds because water soaks into the soil without disturbing the mulch.

Typical Flow Rates

Drip	0.5 – 4 gal/hour
Bubbler	0.5 – 2 gal/minute
Soaker Hose	0.5 – 1 gal/minute

This chart shows how much water drip, bubbler, and hose systems will deliver to your landscape

TREE WATERING TIPS

Watering needs:

- Trees typically need 10 gallons of water for every inch of trunk diameter.
- Water trees 1 or 2 times per week when conditions are hot and dry (June - August).

Watering methods:

- Set up a drip irrigation line that spirals around the circumference of the tree's dripline (edge of the leaf canopy) to target the roots.
- Purchase a slow-release watering bag (great for establishing trees). Simply fill the bag and know that water is being released into the root zone over several hours.

WATER SMART BOZEMAN.

Save more water this summer with your **FREE SUMMER SAVINGS TOOL KIT***
available from the City of Bozeman.



The kit includes:

- Rain gauge
- Soil moisture meter
- Hose spray nozzle
- And more!

Simply swing by the City of Bozeman Water Conservation office at 20 E. Olive St.

*Available to residences connected to City of Bozeman water for outdoor watering. Limited supply, first-come, first-served.

DOING ONE THING MAKES A DIFFERENCE.
FIND OUT MORE AT BOZEMANWATER.COM

Testing Your Sprinkler System

TEST YOUR LAWN

Each lawn's water requirements are different, depending on the soil, sunlight, and other landscaping factors. To find out how much water your sprinkler system delivers, all you need is a few empty tuna tins.

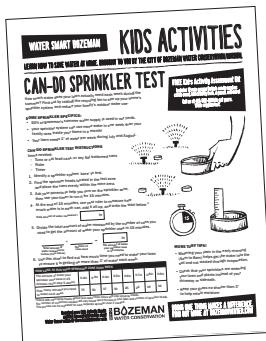
1. Place 12 flat bottomed cans (tuna or cat food cans work) evenly across your lawn.
2. Run your sprinklers for 15 minutes.
3. Use a ruler to measure the depth of the water (in inches) in each can and write it down.
4. Add up the amounts and divide by the number of cans. This number is the average amount of water your sprinkler delivers in 15 minutes.
5. Use the chart below to determine what your total watering time is each week based on the amount of flow in inches from the Tuna Can Test.



Sprinkler Run Times to Apply One Inch of Water Per Week

Average Sprinkler Flow (Inches) from Test	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Watering Time (Total Minutes Per Week)	75	50	37	30	25	22	19	16

Call or stop by the City's Water Conservation Division office at 20 E Olive St. to rent a sprinkler system assessment kit equipped with everything you'll need to complete your own sprinkler system assessment!



GET YOUR KIDS INVOLVED WITH WATER CONSERVATION!
Visit bozemanwater.com and download our "Can-Do Sprinkler Test" Activity Sheet for Kids.

Watering Schedules

AVOID WATER WASTE WITH A CYCLE AND SOAK SCHEDULE

The majority of Bozeman soil is clay-rich and unable to absorb large quantities of water at one time. A cycle and soak watering schedule will slow down water application and minimize water wasted to run-off. Efficient application of water onto your landscape starts with seasonal adjustments to your controller's run times and by applying a **cycle and soak watering method**.

'Cycle and soak' is a term for breaking up the total run time for one zone into two or three shorter run times by applying multiple start times to your schedule.

Example: A 20 minute run time on a scheduled watering day would translate into 2 cycles of 10 minutes, with at least 45 minutes of soak time between cycles.

The cycle and soak method can improve turf health and resiliency while applying less water onto your landscape. The seasonal watering schedule below represents baseline recommended run times for irrigating turfgrass and are based on the sprinkler type. **All watering times below should be scheduled to run 2-3 days/week, with 2 start times per watering day.**

Watering Month	Standard Spray Pop-up Nozzle	Rotor	Rotating Pop-up Nozzle
May	4 minutes	14 minutes	10 minutes
June	6 minutes	18 minutes	12 minutes
July	9 minutes	23 minutes	18 minutes
August	7 minutes	20 minutes	15 minutes
September	4 minutes	14 minutes	10 minutes

Your irrigation system may require more or less run time based on its actual performance, precipitation rate, and weather conditions.

Monitor your grass! If areas of stress appear just before the next watering day begins, your watering times should be about right. This will save our water resources and your money without seriously affecting your lawn's appearance!

Interested in a customized watering schedule?

Schedule a free sprinkler system assessment with our trained staff by calling 406-582-3220! We will check your system and develop a customized report including system repair needs, ways to improve efficiency, and a watering schedule specific to your property and sprinkler system.

Sprinkler Systems: Know Your Type

A healthy, water smart lawn is dependent upon having the correct arrangement of sprinkler heads for your space. Knowing the size of the area you wish to water and other environmental factors of your yard will help guide you toward the right sprinkler head for your project.

Here's a quick comparison of the three types of sprinkler heads most often used:

ROTORS		<ul style="list-style-type: none">• As the name suggests, delivers water in a rotating jet of water.• The slowest delivery of water—about 0.5 inches of water per hour.• Best used in larger areas, 16'-40' wide.• Tends to lead to less run-off and evaporation than spray heads.
STANDARD SPRAY POP-UPS		<ul style="list-style-type: none">• Best used for smaller areas, 4'-15' wide.• Fixed nozzle heads are most common, though some manufacturers offer variable arc nozzles (VAN). A mix of both fixed and VAN nozzles in a zone can lead to uneven water distribution if not adjusted properly.• Speciality nozzles are available for tricky spaces (narrow strips, corners, short radius)• The rapid delivery of water—1.5 to 3 inches of water per hour—can lead to run-off.• Light, misty spray is more prone to evaporation and wind drift.
ROTATING/ MSMT POP-UPS		<ul style="list-style-type: none">• Multi-stream, multi-trajectory nozzles or MSMT rotating pop-up nozzles can be thought of as a hybrid model.• Nozzles can be installed on pop-up spray head bodies, but the delivery of water is more dense and controlled than a standard spray head.• Ideal for areas 8'-30' wide.• Delivers about 0.65 inches of water per hour.• The most water-efficient choice for Bozeman's clay-rich soils.



For more information about the City of Bozeman's Landscape and Sprinkler System Rebate Program, see page 15 of this guide or visit bozemanwater.com and click the Water Conservation button.

Sprinkler Systems: Adjusting and Maintenance

SPRUCE UP YOUR SPRINKLERS

A recent survey indicated that seventy-two percent of all Bozeman residents have automatic in-ground sprinkler systems. These systems can save water—but only if they are maintained and operated properly.

ADJUST YOUR SPRINKLERS

Your sprinkler system can use more water in a week than your family uses inside your home in a month. Small adjustments to your sprinkler system can mean big water savings. Take a few minutes to dial in your spray before the heat of summer.

PRESSURE REGULATING SPRINKLER BODIES

Misting from your sprinkler heads can be the result of high operating water pressure in your sprinkler system. Pressure regulating sprinkler bodies can be installed to reduce excessive pressure within your sprinkler system. These pressure regulating sprinkler bodies come equipped with an integral pressure regulator that allows the sprinkler head to operate near optimal pressure.

BEAT THE FREEZE

The end of September through mid-October is the best time to turn your sprinkler system off and have it blown out. Blow-outs help eliminate cracks, leaks, and other damage from freezing temperatures over the course of the winter.

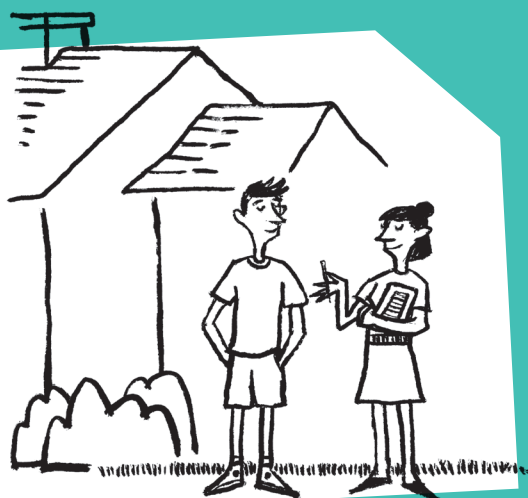
SPRINKLER MAINTENANCE CHECKLIST

In spring, run each zone for 2-3 minutes to make sure everything is working properly. (Many controllers have an automatic test setting just for this reason.) Use this checklist to observe and ask yourself these questions, then adjust as needed:

- ☐ Are any sprinkler heads broken, clogged, or misaligned?
- ☐ Are all rotating sprinkler heads rotating as intended?
- ☐ Are all of the sprinklers popping up to their intended height?
- ☐ Are any sprinklers tilted relative to a flat surface?
- ☐ Are any sprinklers being obstructed by tall grass, plants, trees, fences, etc.?
- ☐ Are any sprinkler heads misting?
(High operating water pressure may cause this.)
- ☐ Do the sprinklers in each zone have consistent spacing?
- ☐ Does each zone have head-to-head coverage?
(Where each sprinkler is throwing water to the next one.)
- ☐ Do all sprinklers have an effective arc?
Do they rotate too much or too little?
- ☐ Do all sprinklers have an effective throw distance?
Is there any over-spray onto pavement?
- ☐ Do the sprinklers in each zone have matched precipitation rates
(inches of water applied/hour)?

WATER SMART BOZEMAN.

SPRINKLER SYSTEM ASSESSMENT



The City of Bozeman offers **FREE Sprinkler System Assessments***. Our trained staff will check your sprinkler system and develop a customized report, including system repair needs, how to improve system efficiency, and customized watering schedules.

Space is limited, sign up early. Call 406-582-3220 to schedule your assessment. DIY Sprinkler System Assessment Kit rentals are also available from the City of Bozeman.

CITY OF BOZEMAN
WATER CONSERVATION

DOING ONE THING MAKES A DIFFERENCE.
FIND OUT MORE AT BOZEMANWATER.COM

*Available to residences connected to City of Bozeman water for outdoor watering. Space is limited for this service. First-come, first-served.

Sprinkler Systems: Troubleshooting

Issue	What To Look For	What To Fix
Broken or damaged sprinkler components	<ul style="list-style-type: none"> • Spewing water • Water pooling • Water flowing quickly • Low pressure • Heads that might be trickling • Minor sputtering 	<ul style="list-style-type: none"> • Replace broken nozzle or sprinkler body • Replace broken or damaged piping below the surface • Remove nozzle/filter and clean any debris before replacing
Mixed sprinkler head types within a zone	<ul style="list-style-type: none"> • Different sprinkler head types within the same zone. Drip, pop-up spray, and rotor sprinkler heads should all be on separate zones to ensure water is being applied evenly within the zone area. 	<ul style="list-style-type: none"> • Select the most appropriate sprinkler head type for the zone and replace any sprinkler head types that do not match with the selected type
Sunken or buried sprinkler heads	<ul style="list-style-type: none"> • Heads that are not visible (below ground surface) when system is off • Heads that cannot spray above the surrounding turf 	<ul style="list-style-type: none"> • Dig up sprinkler body until you reach the main connection pipe and install appropriate extension/riser between the main pipe and sprinkler body
Tilted or misaligned sprinkler heads	<ul style="list-style-type: none"> • Heads are not upright and aligned perpendicular to the ground • May be indicated by yellowing areas (hot spots) or overthrow onto pavement 	<ul style="list-style-type: none"> • Dig up sprinkler head and align the body upright in the ground – this may require the installation of additional soil for support
Obstructed sprinkler heads	<ul style="list-style-type: none"> • Shrubs, trees, plant limbs, lampposts, electrical boxes, fences, furniture, toys, and mailboxes that might be in the path of sprinkler head's throw 	<ul style="list-style-type: none"> • Remove the obstruction if possible or move the head away from the obstruction – turf removal surrounding the obstruction might also be an option if the sprinkler head is converted to drip irrigation for additional plantings (see landscape makeover page 16-19)

Water Smarter Tips

- Water between 4am and 8am, since water evaporates during the middle of the day.
- Turn off your sprinkler system when it rains, or install a rain sensor to do it for you.
- Avoid watering during high winds.
- Try taking two minutes off the watering times for each zone. If that works and your lawn stays green, take off another two minutes.
- Water only when your lawn needs it. Watering three days per week is more than sufficient.
- Adjust watering times throughout the season. A good rule of thumb is 1 to 1.5 inches of water per week during peak season (July and August). Water less in May and June, and by Labor Day, reduce watering to once per week to prepare grass for dormancy.
- Check your sprinkler system for leaks, broken, and misaligned nozzles and repair within seven days.
- Raise your mower blade! Keep your grass at least three inches long to keep the soil cool. This also helps the soil retain moisture.
- Water deeply and infrequently to encourage deep root development.
- Avoid letting water pool in gutters, streets and alleys.
- Keep water from spraying on concrete and asphalt.
- If you use a hose to water, install a spray nozzle to control the rate of flow.
- Check your drip system for leaks.
- Visit bozemanwater.com for more tips.

Landscape and Irrigation Rebate Program



Keep your lawn green, save money, and get some cash back too. When you install qualified sprinkler products, the City of Bozeman will reward you with a rebate. But that's not the only advantage—these incentives can help lower your water bills without sacrificing your lawn.

ABOUT OUR REBATE PRODUCTS

- **WaterSense® Labeled Smart Controllers** use local weather and landscape conditions to make decisions about when and for how long to water to better match plants' water needs. These controllers can be retrofitted to work with existing systems. Some are internet based and include apps to make it fun and easy to adjust sprinkler settings whether you are at home or away.
- **Multiple Stream Multiple Trajectory (MSMT) and H2O Chip Chip Technology Nozzles** deliver water more efficiently than spray heads. With spray heads, 50% of the water can be lost to evaporation and wind drift. Plus, these nozzles can easily replace your existing pop-up spray heads.
- **Rain Sensors** override the sprinkler system when a certain amount of rain has fallen to shut off the system. When the sensor dries, it opens the connection to allow the system to resume normal operations.
- **Drip irrigation** delivers water directly to plants—targeting the roots and minimizing water lost to evaporation and wind drift.
- **Drought tolerant plants** require less maintenance than turfgrass and use 75% less water. Plus, they are beautiful and can add a big splash of color to your landscape. All shrubs, perennials, and grasses listed on pages 20-31 of this guide qualify for our Rebate Program.

Sprinkler systems must be operating properly for these products to be of benefit. To get the most out of your new smart controller, **be sure to program the controller with accurate information about your landscape and sprinkler system.** This will help ensure you meet the water requirements of your landscape throughout the summer without overwatering. For a list of nozzles that qualify for the sprinkler system rebate program visit **bozemanwater.com**. This list is updated on our website and is under "outdoor rebate" webpage under rebates.

Water use and water bills can be reduced with any of these rebated items.

Landscape and Sprinkler System Rebate Program Amounts*

Products	Retrofit to existing system
WaterSense® Labeled Smart Controllers	\$250
Multiple Stream Multiple Trajectory (MSMT or rotary) and H ₂ O Chip Nozzles	\$5/nozzle
Rain Sensors	\$50
Drip Irrigation	\$250
Drought Tolerant Plants and Grasses (qualifying products are listed on pages 20-31 of this guide)	\$100 – \$200

*Rebate amounts differ for new construction. Rebate amount not to exceed purchase price.

Rebates are only available to customers using City of Bozeman water for outdoor watering.

For more information about the City of Bozeman's Landscape and Sprinkler System Rebate Program, visit **bozemanwater.com** and click the Water Conservation button.

WATER SMART BOZEMAN.

UPGRADE TO HIGH EFFICIENCY INDOOR FIXTURES AND APPLIANCES FOR YOUR HOME.



Reduce water use by up to 40 % and receive a cash rebate from us.

CITY OF BOZEMAN
WATER CONSERVATION

DOING ONE THING MAKES A DIFFERENCE.
FIND OUT MORE AT **BOZEMANWATER.COM**

Get the most bang for your backyard buck when you use the City's drought tolerant plant and drip irrigation rebate programs while you DIY your way to an OMGorgeous landscape.

Thinking through your drought-tolerant landscape before you start planting can pay off big-time later.

- 1. Draw a map of your property (see page 19).**
 - Note trees, fences, walkways, and buildings.
 - Indicate areas of sun and shade.
 - Study drainage patterns and note sloped areas.
- 2. Think about how each area will be used. Consider:**
 - Outdoor living and play areas.
 - Pathways and visual barriers to create privacy.
 - Access to and ease of mowing grass areas.
 - If your yard is sloped, terraces reduce erosion and runoff.
 - Trees and shrubs located near buildings offer heating and cooling.

- The Bozeman area is hardiness Zone 4. Select plants that are listed as Zone 4 or lower.
- Consider the height, spread, bloom time, color, form and function of plants to make sure they fit your project's space and purpose.
- Consider how much sun your DIY space gets and choose plants that won't need supplemental watering.
- The drought tolerant plant guide, starting on page 20, will help kick-start the selection process.
- Visit one of our community gardens (see page 4) for inspiration.

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TURF REMOVAL

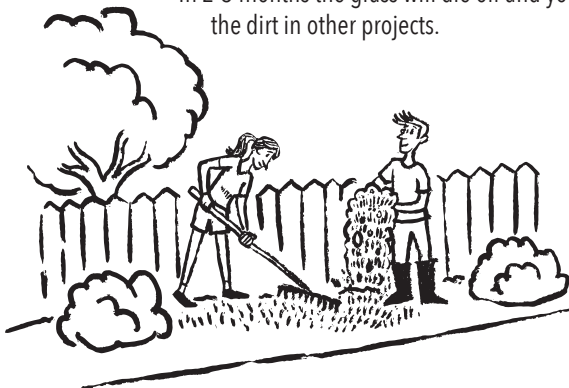
Now that you have identified areas of your landscape to convert to drought-tolerant plants, make some space by removing your existing turf grass. Here are two methods for removing sod to create a water smart landscape:

Sod Cutter Method



This method provides instant results and is the most efficient method for permanently removing turf grass.

1. Based on your plan and design, outline the grass area that needs to be removed. You can use a garden hose, string, or anything that can clearly define the edges of the project area.
2. Contact your utility services and flag all sprinkler heads before digging to avoid damage to your utility lines or sprinkler system.
3. Hand dig a trench next to sidewalks, driveways, corners, and any other areas that might be difficult to access with the sod cutter.
4. Reserve a sod cutter available for rent (or use a garden spade and/or broad fork) to cut the turf into narrow strips and roll them up as you go.
5. Some options for the turf you've removed:
 - Convert it to compost (see page 7).
 - Salvage the soil. Turn the turf upside down, water thoroughly, then cover with cardboard, a layer of compost, and then a top layer of mulch. Water this landscape lasagna thoroughly again. In 2-3 months the grass will die off and you can use the dirt in other projects.

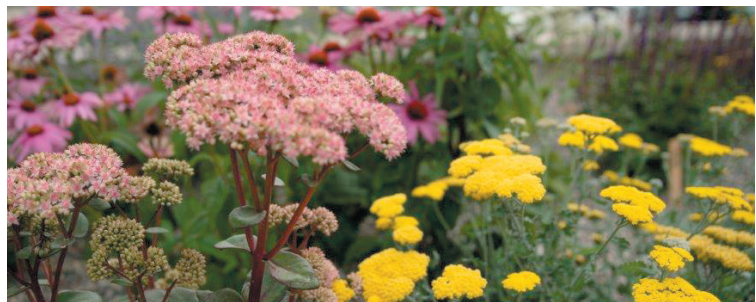


Sheet Mulching Method



This turf removal method is best suited for flat, small to medium-sized areas but can take 2 to 3 months before it is ready for conversion into a water smart landscape.

1. Based on your plan and design, outline the grass area that needs to be removed. You can use a garden hose, string, or anything that can clearly define the edges of the project area.
2. Cut the grass in the project area as short as you can, leaving the grass clippings in place and water thoroughly after mowing.
3. Locate all sprinkler heads in the area and cap them, turn off the sprinkler system zone, or convert to a drip irrigation system (see page 18).
4. Apply a layer of compost over the grass (1" if animal based, 2-3" if plant based) and water thoroughly.
5. Block light on the area by covering with painter's paper, newspaper, or cardboard making sure to overlap the edges by 6-8".
6. Add another layer of compost over the light blocking layer.
7. Cover the entire area with wood mulch and water thoroughly.
8. Wait 2-3 months for grass to die off completely before planting.



Step-by-Step Instructions for Your Landscape Makeover

SPRINKLER CONVERSION

Chances are, the sprinkler system in the area you're converting to a water smart landscape isn't ideal for the drought-tolerant plants you'll be installing. If you removed turf, the rotor or spray irrigation left behind should be converted into drip irrigation to optimize water savings and the health of your new landscape.

TIP: If you have an older irrigation system, we recommend checking the specifications on your automatic irrigation zone control valve before starting your project to make sure the existing valve can handle the low flow rate of the new drip system.

Spray to Drip Conversion Kit Materials:

You can purchase a pre-made kit or build your own with the following items plus a small shovel, channel locks, and tube cutters:

Spray to Drip Conversion Kit:

- 1/2" female to male conversion elbow
- 1/2" drip tubing
- Backflow preventer
- T filter (with male thread facing downward near the ground)
- Pressure regulator attached to the T filter
- Swivel hose tubing adapter (attached to pressure regulator)

Instructions:

1. Make sure the sprinkler system is turned off.
2. Dig and loosen the soil surrounding the sprinkler to be converted.
3. Lift up sprinkler pop-up riser from the body and hold in place using channel locks. Install an extension riser if buried below ground level.
4. Unscrew the existing spray cap at the top of the sprinkler body and remove the internal components.
5. Replace the spray cap with the retrofit component(s) and screw into place:
 - Install 1/2" female to 1/2" male high pressure to low pressure conversion elbow (directly to sprinkler riser or to added extension).
 - Adapt the backflow preventer to the conversion elbow.
 - Install the T filter with connection thread facing downward so tubing can be installed later near the ground.
 - Attach a pressure regulator to the T filter and install the tubing adaptor (swivel or barbed) to the T filter.
6. Size, cut, and connect the drip tubing to the tubing adapter.
7. Cap off the ends of the drip line that will not be used.
8. Repeat this conversion process with additional spray heads, or install caps that will block flow completely if you don't need them in the watering zone.

PLANTING

Now is when all the planning and groundwork you've done can come to life. Here are some tips for success:

- Purchase plants when you have time allotted to plant them.
- Before planting, give your soil some amendment love (see compost on page 7).
- Dig holes to match your plant's depth and 2 times the diameter of the pot it's in.
- Plant in morning or evening to reduce stress from the sun.
- Gently loosen the plant from the container by turning it upside down and squeezing the container's base while you help release the plant from the pot.
- Place your plant in the hole, then fill 1/3 of the way up with soil around the sides, add water and repeat until the soil meets the base of your plant. The extra layers of water will help alleviate the stress of being placed in a new environment.
- If needed, add emitters to the drip line to target plant roots.
- Add mulch to finish off your landscaping.
See page 7 for mulch tips.

MAINTENANCE AND TIPS

- Prune shrubs and trees when they are dormant. Pruning during the growing season will spur growth and increase watering needs.
- Avoid pruning more than 1/3 of the plant material at any one time.
- Weed regularly to leave more water and nutrients available for your plants. Weeding in spring and fall is best.
- Add mulch to your landscape bed (about 2-3" in depth) to hold in soil moisture.
- Check your sprinkler system for leaks and repair as needed.
- Deadhead perennials throughout the summer months to keep them blooming.

LET'S GET STARTED

- Use the grid at right to draw a map of your property.
- Start making a list of plants you want to use, see the Plant Lists on the following pages to determine what plants will work best for your new landscape.



The Water Smart Planting Guide

So you're ready to dig in and get water smart. The aisles of the local nurseries might look like a labyrinth at first, but this guide can help you navigate your way to successfully installing a beautiful water-saving yard.

ABOUT THE PLANT GUIDE

On the following pages is an introduction to many of the drought tolerant species that thrive in Bozeman's climate and generally don't need extra watering once established. We've also included water smart species that will only need watering during hot and dry conditions. Wondering what the difference is?

DROUGHT TOLERANT PLANTS (PAGES 22-27)

These plants generally don't need extra watering after the plant is established, unless there is a long dry spell. Plants are considered "established" usually two to three seasons after planting.

WATER SMART PLANTS (PAGES 28-31)

These plants can withstand periods without supplemental water but will need deep watering during hot and dry conditions.

We've also included important information about the types of plants (shrubs, perennials, grasses), sunlight needs and tolerance, pollinator information, and if the plant is deer-resistant. Watch for these symbols as you review the following pages.

KEY



**Drought
Tolerant**



Water Smart



Full Sun



Part Sun



Shrubs



Perennials



Grasses



**Bee/
Butterfly
Pollinator**



**Deer-
resistant**

DROUGHT TOLERANT AND WATER SMART PLANT CROSS REFERENCE

The plants on the following pages are organized in Drought Tolerant and Water Smart categories. To help you plan for specific parts of your landscape, we have organized the same plant lists by categories of full sun plants, part sun and shade plants, and ornamental grasses and vines.



FULL SUN PLANT LIST (ALPHA BY COMMON NAME)

Common Name	Type	DT/WS**	Page
Alliums, Ornamental	Perennials	WS	29
Alyssum 'Basket of Gold'	Perennials	WS	29
Apache Plume	Shrubs	WS	28
Aster, 'Dream of Beauty'	Perennials	DT	24
Barberries	Shrubs	WS	28
Blanketflower*	Perennials	DT	24
Blue Flax	Perennials	DT	24
Buckwheat Sulfur*	Perennials	DT	24
Buffaloberry, Silver*	Shrubs	DT	22
Butterflyweed*	Perennials	WS	29
Caragana, Pygmy	Shrubs	DT	22
Caragana, Siberian	Shrubs	DT	22
Catmints	Perennials	WS	29
Chokecherry*	Shrubs	DT	22
Coreopsis 'Zagreb'	Perennials	WS	29
Cotoneaster Peking	Shrubs	DT	22
Cut-Leaf Fleabane Daisy	Perennials	DT	24
Evening Primrose, Missouri	Perennials	WS	29
False Indigo	Perennials	WS	29
Fernbush	Shrubs	WS	28
Gayfeather, Dotted*	Perennials	DT	24
Globe Thistle	Perennials	WS	29
Golden Currant*	Shrubs	DT	22
Gumbo Lily	Perennials	DT	24
Hen and Chicks	Perennials	DT	24
Hollyhocks	Perennials	DT	24
Iris, Bearded	Perennials	DT	24
Juniper Common*	Shrubs	DT	22
Junipers	Shrubs	DT	22
Kinnikinnick*	Shrubs	DT	22
Lambs Ears	Perennials	WS	29
Lavender 'Munstead'	Perennials	WS	29
Lilacs	Shrubs	WS	22
Mockorange, Lewis*	Shrubs	WS	28
Mountain Mahogany, Curl Leaf*	Shrubs	DT	22
Oregon Grape*	Shrubs	DT	23
Pale Purple Coneflower*	Perennials	DT	24
Pearly Everlasting*	Perennials	DT	24
Penstemon 'Husker Red'	Perennials	WS	29
Penstemon Pineleaf	Perennials	WS	29
Penstemons*	Perennials	DT	24
Peonies	Perennials	DT	25
Pine, Mugo	Shrubs	WS	28

Potentillas*	Shrubs	DT	23
Prairie Coneflower*	Perennials	DT	25
Prairie Smoke*	Perennials	DT	25
Purple Coneflowers	Perennials	WS	29
Purple Prairie Clover	Perennials	DT	25
Pussytoes*	Perennials	DT	25
Rabbitbrush, Dwarf Blue*	Shrubs	DT	23
Rabbitbrush, Green or Yellow*	Shrubs	DT	23
Rabbitbrush, Silver*	Shrubs	DT	23
Rose 'Harison's Yellow'	Shrubs	DT	23
Rose, Woods*	Shrubs	DT	23
Russian Sage	Perennials	DT	25
Sagebrush*	Shrubs	DT	23
Sagebrush, Silver	Shrubs	DT	23
Sage, Meadow	Perennials	DT	25
Sandcherry, Western	Shrubs	DT	23
Scarlet Hummingbird Flower	Perennials	DT	25
Sea Lavender	Perennials	WS	29
Sedums	Perennials	DT	25
Serviceberry, Western*	Shrubs	WS	28
Snow in Summer	Perennials	WS	29
Soapwort 'Max Frei'	Perennials	WS	25
Spirea Birchleaf 'Tor'*	Shrubs	WS	28
Spirea 'Bridalwreath'	Shrubs	WS	28
Sumac 'Gro-Low'	Shrubs	DT	23
Sumac, Staghorn	Shrubs	DT	23
Sumac, Trilobe*	Shrubs	DT	23
Thymes, Creeping	Perennials	WS	29
Veronica, Turkish	Perennials	WS	29
Viburnum Wayfaring Tree	Shrubs	WS	28
Yarrows	Perennials	DT	25
Yucca, Great Plains*	Shrubs	DT	23



PART SUN AND SHADE PLANT LIST (ALPHA BY COMMON NAME)

Common Name	Type	DT/WS**	Page
Alumroot, Roundleaf*	Perennials	DT	26
Barrenwort, Bishops Hat	Perennials	DT	26
Columbines Assorted	Perennials	DT	26
Coral Bells	Perennials	WS	30
Coral Bells 'Snow Angel'	Perennials	WS	30
Currant Greenmound	Shrubs	WS	28
Daphne 'Carol Mackie'	Shrubs	WS	28
Geranium, 'Biokovo' and 'Karmina'	Perennials	WS	30
Geraniums, Big Leaf	Perennials	WS	30
Harebells*	Perennials	WS	30
Lamium 'Hermans Pride'	Perennials	WS	26
Lamiums	Perennials	WS	30
Pasqueflower*	Perennials	WS	30
Pasqueflower	Perennials	WS	30
Penstemon Little Flower*	Perennials	DT	26
Snow on the Mountain	Perennials	DT	26



ORNAMENTAL GRASSES AND VINES LIST (ALPHA BY COMMON NAME)

Common Name	Type	DT/WS**	Page
Big Bluestem*	Grasses	DT	27
Blue Grama*	Grasses	DT	27
Blue Oatgrass	Grasses	WS	31
Clematis, Golden	Vines	WS	31
Feather Reedgrass	Grasses	WS	31
Fescue Blue	Grasses	DT	27
Fescue 'Siskiyou Blue'	Grasses	DT	27
Grape	Vines	WS	31
Honeysuckle Dropmore Scarlet	Vines	WS	31
Honeysuckle Kintzley Ghost	Vines	WS	31
Hops	Vines	WS	31
Korean Feather Reedgrass	Grasses	WS	31
Little Bluestem*	Grasses	DT	27
Prairie Dropseed*	Grasses	WS	31
Prairie Junegrass*	Grasses	DT	27
Side Oats Grama*	Grasses	DT	27
Switchgrass*	Grasses	WS	31
Tufted Hairgrass*	Grasses	WS	31
Virginia Creeper	Vines	WS	31

*indicates plants native to Montana.
**Drought Tolerant/Water Smart

Plant Rebates*



All shrubs, perennials, and grasses listed in this guide qualify for rebates as part of the City of Bozeman Landscape and Sprinkler System Rebate Program.

Download a comprehensive **City of Bozeman Plant Rebate Shopping List** form to help you purchase plants, save money, and save water. To find the City of Bozeman Plant Rebate Shopping List, click on the Water Conservation button at bozemanwater.com.

PLANT REBATE IN 4 SIMPLE STEPS:

1. Spend between \$100 and \$200 on qualifying plants.
2. Install plants in place of high water use vegetation.
3. Submit rebate application with proof of purchase and installation.
4. Receive rebate.

For more information, click on the Water Conservation button at bozemanwater.com.

*Must be a City of Bozeman water customer. Vines listed in this guide do NOT qualify for the City of Bozeman Rebate Program.

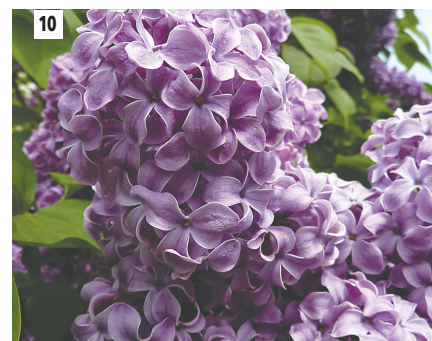
Drought Tolerant Shrubs for Full Sun



Drought Tolerant Plants should not require supplemental water once the plant is established two to three years after planting. This does not apply during periods of prolonged drought.

No.	Common Name	Scientific Name	Notes
1.	Buffaloberry, Silver* 🚫🐝🐝	<i>Shepherdia argentea</i>	Large silver leaf shrub, orange berries on female plants, thorny
2.	Caragana, Pygmy 🚫🐝🐝	<i>Caragana pygmaea</i>	Fine textured, lower growing caragana, yellow flowers
3.	Caragana, Siberian 🚫🐝🐝	<i>Caragana arborescens</i>	Also known as "Siberian Peashrub", often used as a hedge or windbreak plant, yellow flowers attract hummingbirds
4.	Chokecherry* 🐝🐝☀️	<i>Prunus virginiana</i>	Tall shrub with white flowers and edible berries, will sucker but can be pruned into multi stem shrub
5.	Cotoneaster Peking 🚫☀️	<i>Cotoneaster apiculatus</i>	Also known as "Cranberry Cotoneaster", tall shrub that is usually hedged, black berries and glossy foliage
6.	Golden Currant* 🐝🐝☀️	<i>Ribes aureum</i>	Can be pruned into a medium height hedge, early blooms benefit pollinators, edible berries
7.	Juniper Common* 🚫☀️	<i>Juniperus communis</i>	Soft foliage, low spreading form
8.	Junipers* 🚫	<i>Juniperus species</i>	Many cultivars and species, evergreen foliage
9.	Kinnikinnick* 🚫☀️	<i>Arctostaphylos uva-ursi</i>	Low spreading groundcover, one of our only broadleaf evergreens
10.	Lilacs 🚫🐝🐝☀️	<i>Syringa species</i>	Many cultivars and species, fragrant flowers
11.	Mountain Mahogany, Curl Leaf* 🚫	<i>Cercocarpus ledifolius</i>	Large evergreen shrub, likes soils with good drainage

*indicates plants native to Montana.



Plant Guide – Drought Tolerant

No.	Common Name	Scientific Name	Notes
12.	Oregon Grape* 🚫 🦋 🐝 ☀️	<i>Berberis repens</i>	Holly-like foliage, somewhat evergreen, foliage can brown over winter but pruning will renew
13.	Potentillas* 🚫 🦋 🐝	<i>Potentilla fruticosa</i>	Long blooming, compact shrub, lots of cultivars
14.	Rabbitbrush, Dwarf Blue* 🚫 🦋 🐝	<i>Ericameria nauseosa</i>	Also known as "Chrysothamnus Nauseosus/Rubber Rabbitbrush", stays dense and low without pruning, fall blooming
15.	Rabbitbrush, Green or Yellow* 🚫 🦋 🐝	<i>Chrysothamnus viscidiflorus</i>	Green leaves, prune in early spring to keep compact, fall blooming
16.	Rabbitbrush, Silver* 🚫 🦋 🐝	<i>Ericameria nauseosa</i>	Also known as "Chrysothamnus Nauseosus/Rubber Rabbitbrush", silvery leaves, prune in early spring to keep compact, fall blooming
17.	Rose, 'Harison's Yellow' 🦋 🐝	<i>Rosa harisonii</i>	Often found naturalized in historic landscapes, spreads by root suckers
18.	Rose, Woods* 🦋 🐝	<i>Rosa woodsii</i>	Fragrant, pink flowers, edible rosehips, suckers to form thickets, best in naturalized settings
19.	Sagebrush* 🚫	<i>Artemisia tridentata</i>	Can be pruned over time to keep interesting habitat. Montana subspecies: vaseyana, wyomingensis and tridentata
20.	Sagebrush, Silver* 🚫	<i>Artemisia cana</i>	Good all season shrub, somewhat spreading
21.	Sandcherry Western 🦋 🐝	<i>Prunus besseyi</i>	Early white flowers in spring and edible berries, 'Pawnee Buttes' is a low growing spreader
22.	Sumac 'Gro-Low' ☀️	<i>Rhus aromatica</i>	Also known as "Fragrant Sumac", nice low growing shrub, shiny green leaves in summer, turning red and orange in fall
23.	Sumac, Staghorn 🦋 🐝	<i>Rhus typhina</i>	Tall shrub, dramatic, airy structure, red-orange fall color, spreads by root suckers, good on dry slopes
24.	Sumac, Trilobe*	<i>Rhus trilobata</i>	Also known as "Skunkbrush Sumac", stays low in the wild due to grazing, but will grow tall in landscape situations
25.	Yucca, Great Plains* 🦋 🐝	<i>Yucca glauca</i>	Also known as "Soapweed Yucca", very drought tolerant, will form colonies

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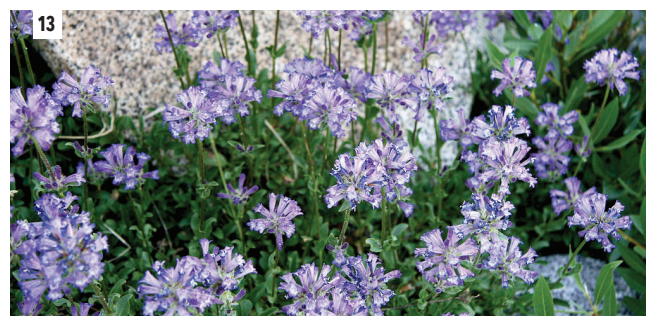
Drought Tolerant Perennials for Full Sun



Drought Tolerant Plants should not require supplemental water once the plant is established two to three years after planting. This does not apply during periods of prolonged drought.

No.	Common Name	Scientific Name	Notes
1.	Aster, 'Dream of Beauty' 🚫🦋🐝	<i>Symphotrichum oblongifolium</i>	Forms a wide, tight mound, light pink flowers in fall, needs room
2.	Blanketflower*	<i>Gaillardia aristata</i>	Long blooming, several cultivars
3.	Blue Flax* 🚫🦋🐝	<i>Linum lewisii</i>	Sky blue flowers with semi evergreen foliage, short lived but will reseed
4.	Buckwheat Sulfur* 🚫🦋🐝	<i>Eriogonum umbellatum</i>	Forms tight mat over time, 'Kannah Creek' is a good cultivar, other species qualify
5.	Cut-Leaf Fleabane Daisy* 🦋🐝	<i>Erigeron compositus</i>	Low mounding with small white daisy-like flowers
6.	Gayfeather, Dotted* 🚫🦋🐝	<i>Liatris punctata</i>	Also known as "Dotted Blazing Star", needs good drainage but once established can be long lived, late blooming
7.	Gumbo Lily* 🦋🐝	<i>Oenothera caespitosa</i>	Also known as "Evening-Primrose", low growing with fragrant flowers blooms from May thru August, can be short lived but reseeds
8.	Hen and Chicks 🦋🐝	<i>Sempervivum species</i>	Also known as "Houseleek", many species/cultivars, succulent leaves
9.	Hollyhocks 🚫🦋🐝	<i>Alcea hybrids</i>	Tall, short lived perennial that reseeds readily, <i>Alcea rugosa</i> is longest lived
10.	Iris, Bearded 🚫🦋🐝	<i>Iris hybrids</i>	Can take very dry conditions, need to be divided when they form tight clumps
11.	Pale Purple Coneflower* 🚫🦋🐝	<i>Echinacea pallida</i>	Great plant for butterflies
12.	Pearly Everlasting* 🚫🦋🐝	<i>Anaphalis margaritacea</i>	Long lived, will form a large mound over time, needs good drainage
13.	Penstemons* 🚫🦋🐝	<i>Penstemon species</i>	Wide range of native penstemons, drought tolerant, important pollinator plant, all species/cultivars qualify

*indicates plants native to Montana.



Plant Guide - Drought Tolerant

No.	Common Name	Scientific Name	Notes
14.	Peonies 🐝	<i>Paeonia species</i>	Even though they might not grow as large or bear as many flowers, this plant can survive without supply water! All species/cultivars qualify
15.	Prairie Coneflower* 🚫🐝	<i>Ratibida columnifera</i>	Upright, airy, mid to late summer blooming, short lived but reseeds
16.	Prairie Smoke* 🚫	<i>Geum triflorum</i>	Low growing, very distinctive feathery seedheads, a common name for this could also be "Old Man's Whiskers"
17.	Purple Prairie Clover* 🚫🐝	<i>Dalea purpurea</i>	Magenta spikes above ferny foliage, midseason bloomer
18.	Pussytoes* 🚫	<i>Antennaria microphylla and rosea</i>	Low, silver-leaf, mat-forming groundcover, can take some shade
19.	Russian Sage 🚫🐝	<i>Perovskia atriplicifolia</i>	Tall plant with silver foliage and lavender like flowers
20.	Sage, Meadow 🚫🐝	<i>Salvia nemorosa</i>	Long lived, lots of cultivars
21.	Scarlet Hummingbird Flower 🐝	<i>Zauschneria garrettii</i>	Bright scarlet-orange trumpet flowers bloom mid season through fall, can spread
22.	Sedums 🐝	<i>Sedum species</i>	All species/cultivars qualify, short ground covers and taller plants, succulent leaves
23.	Soapwort 'Max Frei' 🚫🐝	<i>Saponaria lempergii</i>	Low growing, later blooming, soft pink blooms, saponaria occymoides also included
24.	Yarrows 🚫🐝	<i>Achillea hybrid</i>	Moonshine is a good cultivar, the native white yarrow is invasive, other cultivars also qualify

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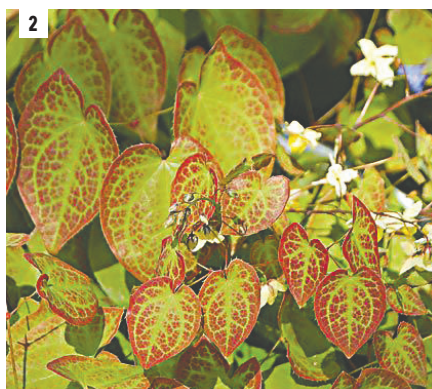
Drought Tolerant Perennials for Part Sun and Shade



Drought Tolerant Plants should not require supplemental water once the plant is established two to three years after planting. This does not apply during periods of prolonged drought.

No.	Common Name	Scientific Name	Notes
1.	Alumroot, Roundleaf* 🚫🐝🐝	<i>Heuchera cylindrica and rotundifolia</i>	Spikes of creamy flowers attractive to hummingbirds
2.	Barrenwort, Bishops Hat 🚫	<i>Epimedium x versicolor sulpherium</i>	Mainly a foliage plant, this species is hardy in Montana, good groundcover under trees
3.	Columbines Assorted 🐝🐝	<i>Aquilegia species</i>	All species and cultivars qualify, long blooming, some native
4.	Lamium 'Hermans Pride'	<i>Lamium galeobdolon</i>	Variegated foliage and yellow flowers
5.	Penstemon Little Flower* 🐝🐝	<i>Penstemon procerus</i>	Mat forming, early bloom, longer lived than most
6.	Snow on the Mountain 🚫	<i>Aegopodium podagraria</i>	Borders on invasive, needs to be in contained area but will grow in difficult dry shade

*indicates plants native to Montana.



Drought Tolerant Ornamental Grasses



Drought Tolerant Plants should not require supplemental water once the plant is established two to three years after planting. This does not apply during periods of prolonged drought.

No.	Common Name	Scientific Name	Notes
1.	Big Bluestem*	<i>Andropogon gerardii</i>	Tall, erect bunchgrass, may turn reddish to bronze in fall
2.	Blue Grama*	<i>Bouteloua gracilis</i>	Forms dense tufts with unique one-sided seedheads, 'Blonde Ambition' taller cultivar
3.	Fescue Blue	<i>Festuca glauca</i>	Tidy blue clump throughout the summer, all cultivars qualify
4.	Fescue 'Siskiyau Blue'	<i>Festuca hybrid</i>	Blue foliage
5.	Little Bluestem*	<i>Schizachyrium scoparium</i>	Greens up later in spring, red fall color
6.	Prairie Junegrass*	<i>Koeleria macrantha</i>	Shorter growing bunchgrass, blooms early
7.	Side Oats Grama*	<i>Bouteloua curtipendula</i>	Distinctive seedhead

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Water Smart Shrubs for Full Sun, Part Sun, and Shade

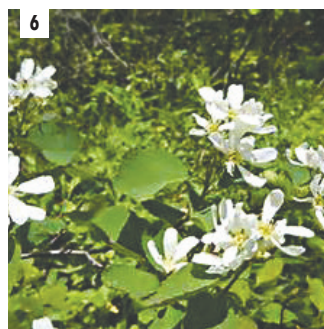


Water smart plants can withstand long periods without supplemental water but will need deep watering during prolonged hot and dry conditions.

	No.	Common Name	Scientific Name	Notes
Full Sun	1.	Apache Plume 🚫🦋🐝	<i>Fallugia paradoxa</i>	Very irregular shape, white flowers form silky seed heads that persist all season
	2.	Barberries 🚫	<i>Berberis thunbergii</i>	Lots of cultivars, some with red foliage, dense branching
	3.	Fernbush 🚫🦋🐝	<i>Chamaebatiaria millefolium</i>	Soft fernlike foliage and white flowers, uncommon but very hardy
	4.	Mockorange, Lewis* 🦋🐝	<i>Philadelphus lewisii</i>	Fragrant white flowers, taller, several good cultivars
	5.	Pine, Mugo	<i>Pinus mugo</i>	Evergreen shrubs, lots of cultivars and sizes
	6.	Serviceberry, Western* 🦋🐝	<i>Amelanchier alnifolia</i>	Also called Juneberry, early white flowers, edible berries and red fall color
	7.	Spirea Birchleaf 'Tor'* 🦋🐝	<i>Spiraea betulifolia</i>	Smaller shrub with white flowers and orange fall color
	8.	Spirea 'Bridalwreath' 🦋🐝	<i>Spiraea × vanhouttei</i>	Cascading white flowers in spring, orange fall color
	9.	Viburnum Wayfaring Tree 🚫🦋🐝	<i>Viburnum lantana</i>	White flower clusters, blue to black berries, velvety leaves

	No.	Common Name	Scientific Name	Notes
Part Sun and Shade	11.	Currant Greenmound	<i>Ribes alpinum</i>	Also known as "Mountain Current", likes afternoon shade, variegated foliage and fragrant pink flowers in early spring
	10.	Daphne 'Carol Mackie' 🦋🐝	<i>Daphne x burkwoodii</i>	Can also take sun, dense branching, short mounding shrub, Alpine Currant included

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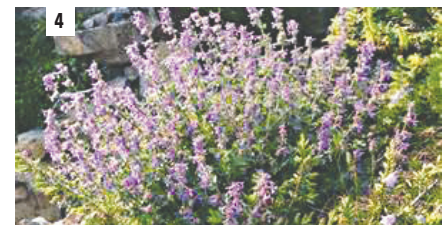
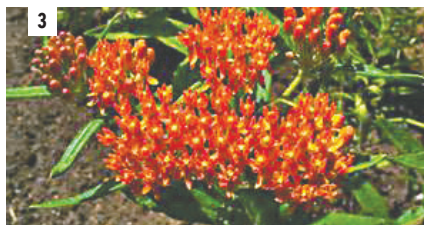
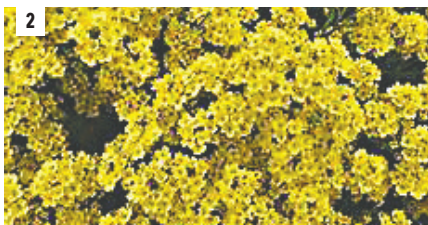
Water Smart Perennials for Full Sun



Water smart plants can withstand long periods without supplemental water but will need deep watering during prolonged hot and dry conditions.

No.	Common Name	Scientific Name	Notes
1.	Alliums, Ornamental 🦋🐝	<i>Allium species</i>	Most of the ornamental alliums are Water Smart, 'Summer Beauty' is a sterile hybrid
2.	Alyssum 'Basket of Gold' 🦋🐝	<i>Aurinia saxatilis</i>	Low growing, early yellow blooms, needs good drainage to persist
3.	Butterflyweed 🦋🐝	<i>Asclepias tuberosa</i>	Bright orange flowers, needs well drained soil, spreads somewhat but not in any way invasive
4.	Catmints 🚫🦋🐝	<i>Nepeta x faassenii</i>	Long blooming, likes hot dry places, all species/cultivars qualify
5.	Coreopsis 'Zagreb' 🚫🦋🐝	<i>Coreopsis verticillata</i>	Long blooming yellow flower, forms delicate clumps
6.	Evening Primrose, Missouri 🦋🐝	<i>Oenothera missouriensis</i>	Large yellow flowers in mid summer, low growing
7.	False Indigo 🚫🦋🐝	<i>Baptisia australis</i>	Large, shrub-like plant, long lived, lupine-like spikes of blue flowers in spring
8.	Globe Thistle 🚫🦋🐝	<i>Echinops ritro</i>	Tall plant with distinctive deep blue globe shape flowers
9.	Lambs Ears 🚫	<i>Stachys byzantina</i>	Low growing, wooly silver foliage, non-flowering cultivars recommended
10.	Lavender 'Munstead' 🚫🦋🐝	<i>Lavandula angustifolia</i>	Fragrant flowers and leaves
11.	Penstemon 'Husker Red' 🚫🦋🐝	<i>Penstemon digitalis</i>	Burgundy-bronze foliage with spikes of whitish flowers, longer lived than most penstemons
12.	Penstemon Pineleaf 🦋🐝	<i>Penstemon pinifolius</i>	Likes good drainage, striking orange blooms later in season, 'Mersea Yellow' has yellow flowers
13.	Purple Coneflowers 🦋🐝	<i>Echinacea purpurea</i>	Lots of cultivars available/qualify
14.	Sea Lavender 🦋🐝	<i>Limonium latifolium</i>	Clouds of fine flowers in mid summer, salt tolerant
15.	Snow in Summer 🚫🦋🐝	<i>Cerastium tomentosum</i>	Low growing, silver foliage, white blooms, spreads
16.	Thymes, Creeping 🚫	<i>Thymus species</i>	Ground covers, ornamental species/cultivars qualify
17.	Veronica, Turkish 🦋🐝	<i>Veronica liwanensis</i>	Very low growing ground cover, Sky blue flowers

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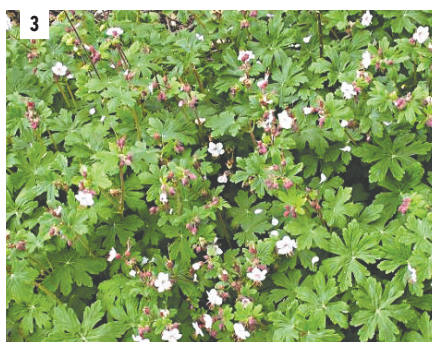
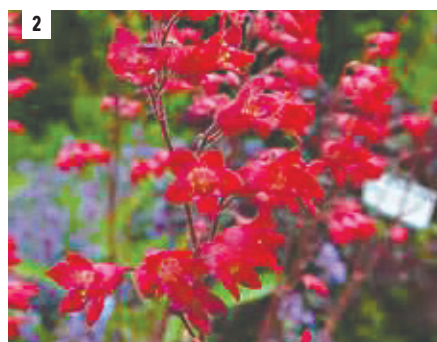
Water Smart Perennials for Part Sun and Shade



Water smart plants can withstand long periods without supplemental water but will need deep watering during prolonged hot and dry conditions.

No.	Common Name	Scientific Name	Notes
1.	Coral Bells 🚫🐝	<i>Heuchera species</i>	Many species and cultivars, 'Firefly' attractive to hummingbirds
2.	Coral Bells 'Snow Angel' 🚫🐝	<i>Heuchera sanguinea</i>	Interesting variegated foliage
3.	Geraniums, Big Leaf 🐝	<i>Geranium macrorrhizum</i>	Spreading groundcover, 'Ingwersen's Variety' most drought tolerant
4.	Geranium 'Biokovo' and 'Karmina' 🐝	<i>Geranium cantabrigiense</i>	Great groundcover for shady places
5.	Harebells* 🚫🐝	<i>Campanula rotundifolia</i>	Forms colonies, delicate blue flowers
6.	Lamiums 🚫🐝	<i>Lamium maculatum</i>	Low growing, variegated leaf, many cultivars
7.	Pasqueflower* 🐝	<i>Anemone patens</i>	One of the earliest bloomers, crocus like flowers, silky seedheads, good foliage the rest of season
8.	Pasqueflower 🚫🐝	<i>Anemone vulgaris</i>	Same characteristics as native, larger growing

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Water Smart Ornamental Grasses



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No.	Common Name	Scientific Name	Notes
1.	Blue Oatgrass 🚫	<i>Helictotrichon sempervirens</i>	Blue foliage color, large bunchgrass, needs space
2.	Feather Reedgrass 🚫	<i>Calamagrostis x acutiflora</i>	Several cultivars, tall upright
3.	Korean Feather Reedgrass 🚫	<i>Calamagrostis brachytricha</i>	Lovely plumed seedheads in fall
4.	Prairie Dropseed* 🚫	<i>Sporobolus heterolepis</i>	Lower growing clump, fine foliage, airy seedheads
5.	Switchgrass* 🚫	<i>Panicum virgatum</i>	Several cultivars, tall upright, seed heads later in season
6.	Tufted Hairgrass* 🚫	<i>Deschampsia caespitosa</i>	Several cultivars, frothy seed heads

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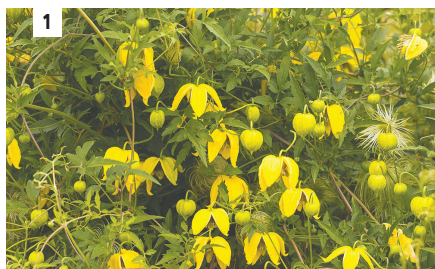


Water Smart Vines

Water smart plants can withstand long periods without supplemental water but will need deep watering during prolonged hot and dry conditions.

These Water Smart Vines do not qualify for the Plant Rebate Program

No.	Common Name	Scientific Name	Notes
1.	Clematis, Golden 🚫 🦋 🐝	<i>Clematis tangutica</i>	Prolific flowers and lacy seed heads, can reseed
2.	Grape	<i>Vitis hybrid</i>	'Valiant' hardy cultivar, edible berries
3.	Honeysuckle Dropmore Scarlet 🚫 🦋 🐝	<i>Lonicera brownii</i>	Scarlet-orange tubular flowers, attract hummingbirds
4.	Honeysuckle Kintzley Ghost 🚫 🦋 🐝	<i>Lonicera reticulata</i>	Very full and fast growing, yellow flowers and blue-green foliage
5.	Hops 🦋 🐝	<i>Humulus lupulus</i>	Yellow-green flowers with papery cone-shaped fruits, lots of cultivars
6.	Virginia Creeper 🚫	<i>Parthenocissus quinquefolia</i>	Clings to fences and masonry, black berries and red fall foliage



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