



A GUIDE TO Organic Lawn Care



Thank you
to our project partners.

Organic Land Care...



restores our relationship with the land and ensures that good stewarding practices are passed down to the next generations while safeguarding the health of our community.



encourages local climate solutions by supporting healthy soils that sequester carbon and efforts that move us away from fossil fuel-based practices and products.



eliminates pesticide use, protecting native pollinators and other insect species.



creates landscapes that allow for greater biodiversity, providing safe habitat for wildlife.



protects the Clark Fork River and its vast network of tributaries from polluted runoff.

What is Organic Lawn Care?

Organic lawn care is a way to grow beautiful lawns by building healthy soils. These soils contain countless living organisms that support the growth of vigorous grass that crowds out weeds and discourages pests and diseases. Organic lawn care works with nature, using carefully selected fertilizers and compost as well as effective mowing, aeration, and seeding.

This publication
is made possible by:



Why Go Organic?

#1 It Keeps Children and Pets Safe

You can have a beautiful lawn without using harmful chemicals. The herbicides used in traditional lawn care have been linked to health problems among children, adults, and pets.

#2 It Benefits the Environment

Countless tiny organisms in healthy soil build an interconnected ecosystem that makes your lawn more resilient and helps it withstand heat and drought. Living soils and the plants they support draw down carbon dioxide from the air and offset climate change. Living soils are damaged by synthetic fertilizers and herbicides.

Synthetic fertilizers and many pesticides dissolve in water and can run off into creeks and rivers, where they can harm aquatic ecosystems and contribute to algae blooms.

All synthetic fertilizers and most pesticides are made using fossil fuels – a process that releases carbon dioxide into the atmosphere.

Chemical pesticides that are used on lawns can harm beneficial insects like bees and other pollinators. It's one reason many species of insects are declining.

#3 It Saves Money

Compared to lawns maintained with synthetic fertilizers and pesticides, organic lawns need less watering. That's because the underlying soil is healthy and absorbs water more efficiently. After an initial investment in time and money, your water bills will be less.

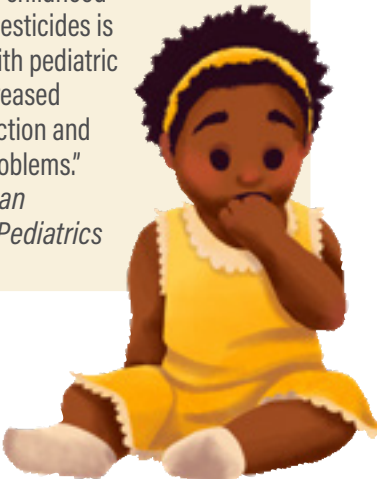
#4 It works!

You can have a beautiful, organic lawn by following the steps in this guide.



Babies and children are
at greatest risk from
lawn chemicals.

- Children often play on the ground. They are exposed to more chemicals when they put their hands and toys in their mouths.
- Children take in more water, food, and air (and chemicals) relative to their body size.
- Children's brains and nervous systems are more vulnerable because they are still developing.
- Children's bodies don't detoxify chemicals as well as adults.
- "Prenatal and childhood exposure to pesticides is associated with pediatric cancers, decreased cognitive function and behavioral problems."
- The American Academy of Pediatrics





STEP 1: Build Healthy Soil



Healthy soil is teeming with trillions of living organisms that have a beneficial relationship with the plants in your lawn. In the tiny air spaces around their roots, plants release carbohydrates that feed microorganisms which, in turn, break down organic matter that feeds the plants. Such healthy soil is the key to a healthy lawn.

Two Ways to Improve Your Soil

If you suspect you have a mineral deficiency or toxicity in your soil, consider testing it. You can have this done locally (see our list of products and services), but if you restore a healthy ecosystem in your soil by following the steps below, most problems will solve themselves.

Aerate

Healthy soil is full of roots, but roots don't grow in the soil itself. They grow in tiny air pockets between soil particles that contain oxygen, microorganisms, and water. These air pockets disappear when the soil is compacted, slowing root growth and causing bare patches in your lawn. The best thing you can do to grow a healthy lawn is to aerate your soil. Aerating reduces compaction, provides oxygen, and improves drainage. The best way to do this is with plug aeration. You can either hire a lawn care company or rent an aeration machine, and do it yourself. But be careful! The machines are heavy and require a truck to transport.

Leave the plugs on your lawn to decompose.

Feed

Once you have aerated your soil, apply compost. Good quality compost adds microorganisms and key nutrients. Spread your compost about $\frac{1}{4}$ of an inch thick over your whole lawn. Certified organic or regularly tested natural compost is best. Bags or bulk can be purchased locally. Kick-start your lawn program by feeding soil microorganisms with inexpensive and easy-to-make liquid soil food.



What's in a handful of healthy soil?

100,000 protozoans of 100s of species

30 miles of fungal mycelium

100,000 bacteria of 10,000 species

hundreds of species of algae

10,000 nematodes

5,000 invertebrates



STEP 2: Water Effectively

Many of us water our lawns too frequently and too briefly. The result is grass with short roots, and a lawn that is less resilient to drought, diseases, and pests. Watering less often for a longer time allows the water to soak into the soil and encourages deep roots and healthy, thick grass.

Tips:

- Evenings are the best time to soak or drip irrigate. Early mornings (before 10 am) are best for sprinklers.
- Established lawns need 1-2 inches of water every 3-5 days. During hot weather, water 1 inch every 3 days.
- Measure how much water you apply by placing 3-5 straight-sided cans on your lawn when you water. Note the time it takes to get 1 inch of water in the cans.
- You can also stick a thin metal rod or screwdriver into your lawn after you water. It will stop when it hits dry soil. It should go down 6 inches
- Don't let that precious water run down the gutter! Know your soil and water accordingly. Clay soils will absorb water slowly. Sandy soils will let water run through before plants can take it up. (Compost will help with both these problems.) Loamy soils combine sand, silt, and clay and absorb water well.
- If it rains, reduce your watering schedule.

Liquid Soil Food

(Recipe for a 32-ounce hose-end sprayer)

2 ounces humic acid
2 ounces liquid kelp
1 tablespoon molasses

For a deluxe version, add 6 ounces of fish hydrolysate.

Mix all ingredients into a hose-end sprayer and fill with water. Each 32-ounce batch covers 1,000 square feet of lawn.

Compost Tea

Compost tea is a nutrient-rich food that you can directly apply to your lawn. Compost and other plant nutrients are steeped in water for 18-24 hours while the mixture is aerated and agitated. It's a lot of work to do yourself, so buy it locally.



What kind of grass seed?

Cold adapted species of grasses are best for Montana. Ryegrass and Kentucky bluegrass are good for sunny areas. Sheep, tall, and hard fescues are more drought tolerant. Some species of bluegrass and fescue grow well in shady areas. All should require only moderate watering. Clovers were common in lawns prior to the 1940s. Clover fixes nitrogen from the air and stores it underground in a form plants can use. After the herbicide 2,4-D was developed, it was widely used to kill broad-leaved weeds, but it also killed clover. Miniclover (registered trademark) and White Dutch Clover are two varieties you can re-introduce to an organic lawn.

STEP 3: Use Natural or Organic Products

Compost and fertilizers that are labeled organic come from animal and plant sources.

What is the difference between synthetic and organic fertilizers? Synthetic fertilizers are mineral salts that dissolve in water. They can be taken up rapidly by plants, but the excess runs off your lawn ending up in creeks and rivers where it upsets the balance of nutrients. Synthetic fertilizers can also harm soil microorganisms, and manufacturing them requires burning fossil fuels which contributes to climate change.

Organic fertilizers don't dissolve in water. They're broken down by soil microorganisms which in turn provide nutrients for plants. Organic fertilizers stay in your lawn and don't run off.

To make sure you are getting organic fertilizer, read labels carefully. Avoid urea which is often in "organic-based" products. Look for the Organic Materials Research Institute label (OMRI) which means the product has been rigorously tested.

STEP 4: Mow and Seed Your Lawn

Mowing

Set your blade height to 3 inches. Taller grasses have more surface area to photosynthesize and grow deeper roots. The shade from taller grasses discourages weed seeds from germinating and slows down the growth of weed seedlings. Never mow more than $\frac{1}{3}$ of the grass blade at one time.

Clippings

Leave clippings on your lawn. If your soil is healthy, they will decompose quickly. The curved blades on mulching mowers cut clippings into smaller pieces that decompose even faster.

Seeding

Re-seeding your lawn is a good way to ensure it is thick, healthy, and able to out-compete weeds. In the spring, fill bare spots with grass seed. In the fall, if your lawn is sparse due to insect munching or disease, spread seed over the entire lawn (called overseeding). You can do this by hand or with a seed spreader.

THREE PLANS FOR AN ORGANIC LAWN: Good, Better, and Best

Now that you know the basics of organic lawn care, here are three seasonal plans that will help you reach your goals! You can mix and match the plans over time. To choose the right plan, consider:

Expectations.

Are you ok with a few weeds, or do you want a completely weed-free lawn?

Time and money.

If you have extremely high expectations and want a completely weed-free lawn, you'll need to spend more time and money.

Starting condition of your lawn.

If your yard is extremely weedy or has been treated for years with Weed & Feed, synthetic fertilizers, or other lawn chemicals, it will take more time to restore the soil and grow healthy grass.

Did you Know?

- Turf grass is the largest irrigated "crop" in the country.
- Up to 10 times more pesticides are used per acre on turf in urban areas than are used in agriculture.

Take the 10% Challenge.
If all of us converted 10% of our lawns into native gardens, we could dramatically cut our water and pesticide use and increase habitat for pollinators, birds, and other wildlife.

Good

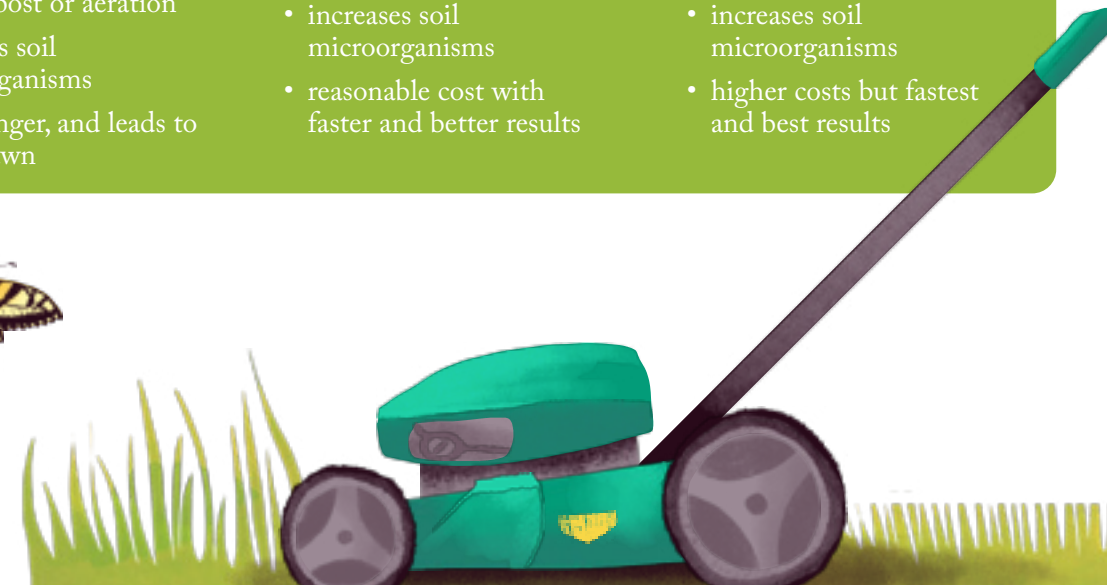
- lowest cost and time requirements
- no compost or aeration
- increases soil microorganisms
- takes longer, and leads to a nice lawn

Better

- one compost application
- one plug aeration
- increases soil microorganisms
- reasonable cost with faster and better results

Best

- two compost applications
- two plug aerations
- increases soil microorganisms
- higher costs but fastest and best results



Products and Services

The following suppliers are from the Missoula area. Seek out similar suppliers where you live.



NATURAL, SUSTAINABLE, LOCAL.

Garden City Compost sells safe, high-quality compost, enriched topsoil, and top dressing by composting thousands of tons of biosolids, as well as, kitchen and yard waste that would otherwise go to landfills. Their products are tested regularly and are presently being considered for organic status.



Earth in Hand's comprehensive non-toxic services include: soil testing, biological remediation and mineral balancing, aeration, landscape maintenance and construction. Earth in Hand's promise with any service is: It's Safe to Play, Safe to Eat, and Safe for Life.



Pipilo Native Plants specializes in plants native to the Missoula and Five Valleys area. Pipilo plants are grown from seeds and cuttings responsibly collected from the local area.



Native Yards creates and maintains native landscapes and hardscapes, restores disturbed areas, rescues native sod, uses natural weed and exotic grass controls, and promotes native plant diversity landscaping options.



Serving Missoula's gardeners for over 100 years, Caras Nursery stocks a host of products used in organic lawn care and offers a wide variety of native plants for sale. Located at 2727 S. 3rd Street W, Missoula, 59804



Soil Cycle is a compost-based nonprofit focused on food waste reduction and soil health. Members receive regular kitchen waste pick up by bicycle and quality compost back several times a year. Compost, worm castings, biochar, and compost tea are also available.



The Missoula Urban Demonstration Project (MUD) empowers people to build a more sustainable community through tool sharing and hands-on learning. The MUD tool library has a variety of lawn care tools available for community members to borrow and MUD's demonstration site showcases organic landscaping options.

Bring in this Guide for \$5 off your next purchase at Garden City Compost