



Protecting the health of the Gallatin River and the trout and other animals depending on its clean water, is critical for all who live in the Big Sky community and other areas within the Upper Gallatin River Watershed.

Each one of us can make small changes in our behaviors, which collectively will make a positive impact. Take the lead, and make your landscape trout-friendly!

LANDSCAPE POLLUTANTS OF CONCERN

Elevated levels of nitrogen and algae have been documented in the West Fork of the Gallatin River, and two of its tributaries, the Middle Fork and the South Fork. High levels of leached nitrogen typically result in excess algae in streams. Excess algae affects both aquatic life and recreation. Recreational impacts from excessive amounts of algae on stream bottoms can affect fishing, swimming, boating, and general aesthetics. Increased levels of algae may be beneficial to aquatic life in small amounts but too much algae lowers oxygen levels, harming fish and their main food source, stream insects.

In addition to nitrogen, chemicals in the form of herbicides and pesticides from landscaping activities can be toxic to fish and wildlife, and can pose a threat to public health by contaminating groundwater, Big Sky's source of drinking water.

BWTF EFFORTS TO REDUCE LANDSCAPING NITROGEN

The Blue Water Task Force (BWTF) has developed a plan to reduce nitrogen inputs into local rivers and streams. Under the guidance of the West Fork Nitrogen Reduction Plan, the BWTF is working with local residents and business owners to reduce nitrogen inputs from non-point source pollution. Non-point source pollution is pollution that originates from many diffuse sources. One example of nonpoint source pollution is nitrogen from fertilizer applied to residential areas and golf courses. To address this source, the BWTF is implementing the Trout-Friendly Landscaping Program



PHOTO: GALLATIN RIVER GUIDES

SUPPORTING BUSINESSES:

- 46 North Landscape & Design, Big Sky
- Big Sky Landscaping, Big Sky
- Solstice Landscaping, Bozeman
- Wapiti Landscaping, Big Sky
- Wildwood Nursery, Big Sky

SUPPORTING ORGS AND AGENCIES: (Financial or Technical)

- Big Sky Resort Area Tax District
- Big Sky Watershed Corps
- Gallatin/Big Sky Weed Committee
- Gallatin Local Water Quality District
- Montana Department of Environmental Quality
- Montana Fish, Wildlife and Parks
- Gallatin County MSU Extension
- Montana Natural Resources and Conservation Service
- Soil and Water Conservation Districts of Montana, Inc.



CONNECTION BETWEEN THE UPPER GALLATIN RIVER AND LAND ACTIVITIES

The Upper Gallatin River is a fragile, ecologically and recreationally important river valued for its scenic beauty, water quality, blue ribbon fisheries, wildlife habitat, rafting, and kayaking. The river receives its water from rain and snow that falls within the Gallatin Watershed. Water either infiltrates into the soil, travels to the groundwater system and over time connects to nearby creeks and into the Gallatin River or in some cases directly runs off into the river.

Each yard and landscape in Big Sky is part of the Gallatin Watershed. Every drop of water not used by vegetation on these yards and landscapes will eventually make its way to nearby creeks and into the Gallatin River. This water will collect and carry traces of fertilizers, pesticides, herbicides and other minerals along with it on its path to the Gallatin River.

All activities on the land surface affect the quality of surface water and groundwater. As Big Sky continues to grow, increased activities on the land have potential to increase pollutants, which threatens water quality of the Gallatin and the health of plants, aquatic insects, fish and other animals that live and rely on clean water.

THE BIG SKY COMMUNITY WORKING TOGETHER TO PROTECT WATER RESOURCES

PRESENTED BY:



(406) 993-2519

BLUEWATERTASKFORCE.ORG

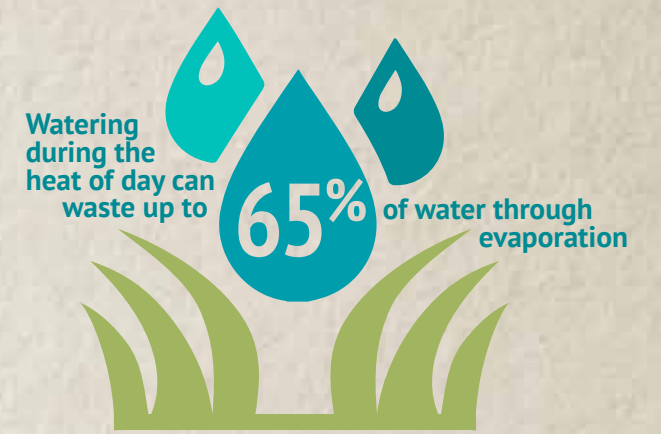
Did you know

Did you know that there are only seven Westslope Cutthroat trout in the Gallatin Watershed? Four of these population are genetically pure and two can be found in the Big Sky area in the South Fork above Ousel Falls and in Beehive Creek.

Trout-Friendly Landscaping

HOW YOU CAN HELP!

You have the opportunity to make choices that reduce negative impacts on the Gallatin River and its healthy trout populations by following the four criteria of a Trout-Friendly Landscape:



1 USE APPROPRIATE AMOUNTS OF ORGANIC FERTILIZERS

Chemical fertilizers can be expensive and over time may only provide a high but short-lived supply of nitrogen and phosphorus to your landscape. Excessive levels of fertilizers can cause more harm than good to your plants and the environment. Excess nitrogen not taken up by plants will infiltrate into the groundwater system or will be carried on the surface with rain events and into the river. Good organic fertilizers like landscape clippings and compost promote plant growth and encourage healthy soils.

Tips on limiting fertilizer application:

- Raise mower blade and mow higher - this allows for a deeper root system and results in less infiltration of excess fertilizer and water
- Don't fertilize if not needed – leaf litter and clippings may provide enough nitrogen
- Test your soil to determine how much and what proportion of nitrogen, phosphorus, and other nutrients your landscape actually needs
- For soil and plant tissue tests, go to MSU's Soil Fertility: Home Garden Soil Testing & Fertilizer Guidelines (landresources.montana.edu/soilfertility/home%20gardening.html)
- Choose the type of organic fertilizer based on soil test results
- Contact the local Gallatin County MSU Extension if you need help interpreting your soil test or need suggestions of what type of fertilizer is best suited to soil conditions (406) 388-3213
- Test your garden for organic matter – a healthy soil has a small amount of organic matter, no more than 5-8%
- Peat moss is a low nitrogen alternative and helps add organic matter and improve soil health

2 LIMIT HERBICIDES AND PESTICIDES

Excessive application of herbicides and insecticides can affect ground and surface water quality. Insecticides can have the same effect on trout and aquatic life as they have on insects. Herbicides can affect plants in downstream areas if transported by water runoff or through the groundwater.

Tips on reducing herbicide and pesticide use:

- Mow high – this will help increase grass density
- If you must use chemical pesticides or herbicides, lightly spot spray the weeds, do not treat entire landscape
- Use beneficial insects to control pests
- Know what weeds you are dealing with, when it is best to treat them and what is the most effective herbicide or pesticide to apply. More information is available on the Gallatin/Big Sky Weed Committee website (www.bigskyweeds.com) or by contacting bigskyweeds@gmail.com.
- Never water after application of herbicides or pesticides



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3 PLANT NATIVE PLANTS AND RESTORE STREAMBANKS

Native plants require less water and fertilizer than introduced vegetation, because they evolved to live in the local climatic conditions! Native streambank vegetation is crucial for trout, aquatic life and wildlife. This vegetation helps prevent sediment and erosion, buffers flood impacts and will help keep water temperatures cool by shading the stream. Vegetated streambanks will also serve as nesting habitats and help filter nutrients from your landscape.

Tips on preserving a vegetated streambank:

- Keep existing native plants, shrubs and trees – especially near the stream!
- Plant native! And close to exposed streambanks plant woody natives, like willows, alders, or sedges
- Do not mow or spray herbicides close to the streambank



4 BE WATER-WISE

Most people water their landscapes more than needed. Excess water will infiltrate into the ground water and erode soils by creating runoff. Watering less frequently will produce healthier plants and deeper roots.

Tips on conserving water:

- Less is more - water your landscape 1 inch once a week, this will allow deep root-growth
- Automate sprinkler systems to limit watering during rain events greater than ½ inch
- Consider sun exposure and slope of landscape factors when watering
- Water at night or early AM: avoid watering in the heat of day – it can waste up to 65% of the water through evaporation.
- Check the timing and the rate of your irrigation system
- Periodically clean your irrigation valves
- Mulch will reduce evaporation and weeds
- Organic matter will improve a soils water holding capacity thus needing less water