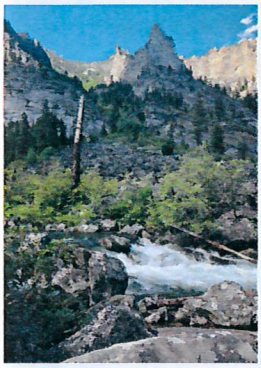
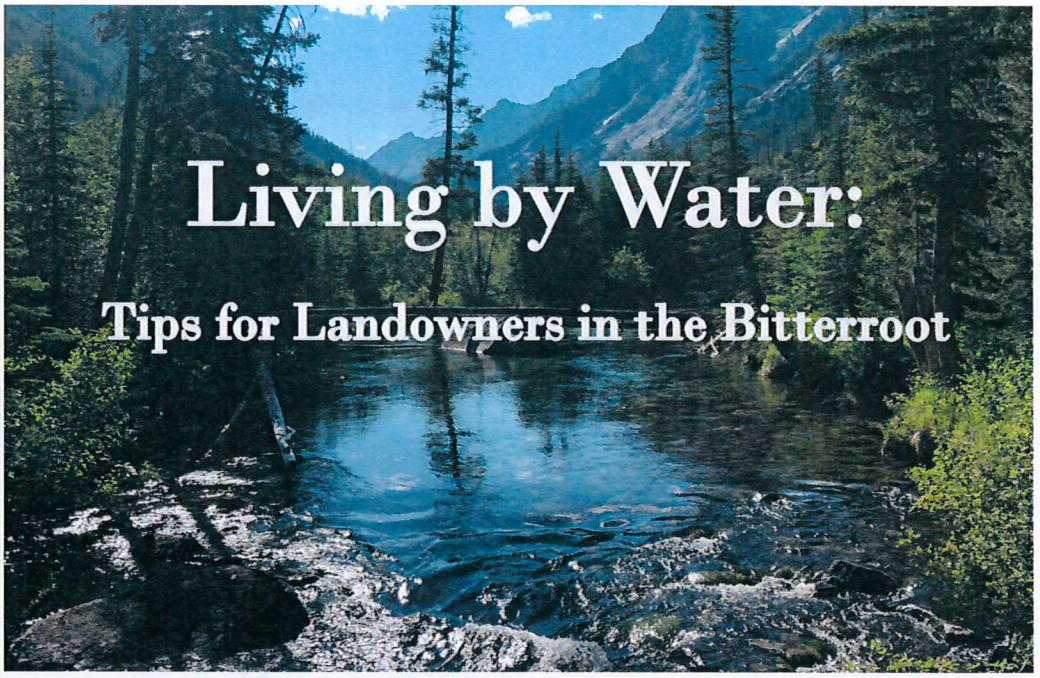




Living by Water:

Tips for Landowners in the Bitterroot

"In the Bitterroot Valley we are lucky enough to be surrounded by water. Between the snow-capped peaks, and deep aquifers, water is an essential component of our culture, economy, and ecosystems.

As the population of Ravalli County continues to expand, more stress will be placed on our water. Small threats from a diversity of sources can have huge impacts.

Landowners in the Bitterroot have an important opportunity to help conserve our water resources. Follow these simple steps to protect the waters of the Bitterroot, because stewardship of our water resources begins at home."

Water Conservation

Surface water and ground water are inextricably linked. In the Bitterroot, many of our streams are fed by both surface water runoff and ground water infiltration. Riparian areas, agricultural fields, wells, municipal water use, runoff from pavement or fields, and recreation all interact to determine the quality and quantity of our water. It's imperative to not only consider how to keep our water clean, but also how to conserve it.

Landowner Tips for Lawn Care:

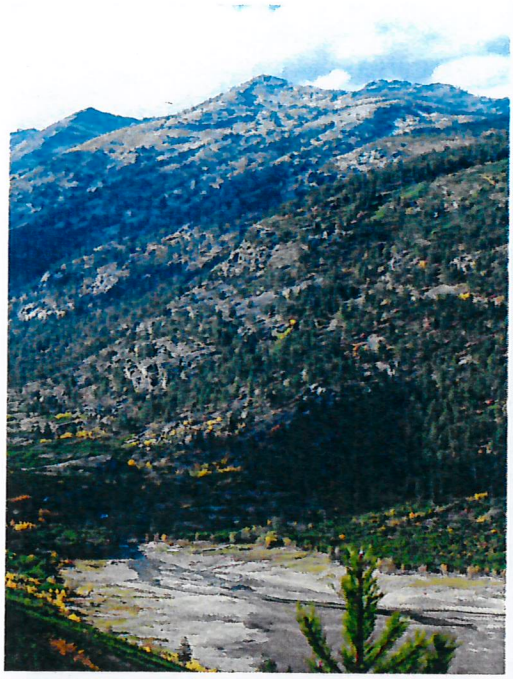
- Water when it's cool to prevent loss from evaporation
- Repair and maintain spigots, hoses, and sprinklers to prevent loss from leaks
- Use a "step-test" to determine when your lawn needs watered
- Use drought-tolerant, native plants that naturally need less water
- Use mulch to maintain soil moisture and driplines to target watering to specific plants

Nonpoint Source Pollution (NPS)

NPS pollution occurs when runoff from rain or snow melt flows overland to enter rivers and lakes. The water picks up anything and everything found on the land or in the soil, which can include pollutants of many forms (e.g., excess nutrients from fertilizers, oil from cars, or salt from roads). These pollutants are then carried into water bodies and their concentrations rise as each stream flows into the next. Ultimately, the pollutants end up at the mouth of a stream or lake. NPS pollutants come from a variety of sources all over the watershed and it's impossible to "point" to where they originate.

Landowner Tips for Pollution Prevention:

- Avoid overuse of fertilizers, herbicides, and insecticides
- Maintain & regularly service septic systems
- Never dump anything other than water into storm drains or sewer grates
- Install rain gardens to collect roof or driveway runoff
- Maintain healthy riparian areas to filter pollutants



Aquatic Invasive Species (AIS)

AIS are any species, such as plants, animals, and pathogens, that are not native to an area and pose a substantial threat to the economy, culture, or ecosystem. AIS are introduced either intentionally, such as when aquariums or fish tanks are dumped into natural waters, or accidentally, such as when boats carrying invasive mussels are launched in local waterways. AIS pose a significant threat because our local waterways lack the natural predators of these invasive species. They quickly outcompete our native species and can cause irreversible changes to the species composition of natural ecosystems. Other impacts from AIS can include damage to irrigation equipment, loss of recreational opportunities, costly maintenance of hydraulic power infrastructure, degraded wildlife habitat, and public health risks.

Landowner Tips to Prevent AIS Spread:

- Stop at all boat check stations, every time
- Clean, Drain, & Dry any equipment that's been in the water (including farming, gardening, and irrigation equipment) and have out of state equipment inspected
- Do not fill tanks in one location and empty them in another
- Plant only native species near any water source such as ponds, irrigation ditches, or streams
- Never release or dispose of anything, alive or dead, from an aquarium or fish tank into the environment
- Learn to identify AIS and report any suspected AIS locations

Riparian Areas

Riparian areas, also known as riparian zones and riparian buffers, are the interface between water and dry land. The deep-rooted vegetation characteristic of riparian areas provides highly beneficial functions for landowners and our waters. First, the deep roots act as a net, holding the soil in place along the water's edge and preventing erosion. Second, a riparian area acts as a sponge, soaking up excess water then slowly releasing it. In this way, they mitigate both floods and droughts. Third, they act as filters. Water runoff can carry harmful pollutants such as fertilizer and herbicide. As the runoff passes through a riparian area, pollutants are captured and filtered before the runoff enters a waterbody. Finally, riparian areas shade water and help keep water temperatures low, preventing excess algae growth and maintaining habitat for fish and aquatic life.

Landowner Tips for a Healthy Riparian Area:

- Always maintain deep-rooted vegetation along water's edge
- Use a diversity of plant types, including trees, bushes, and grasses
- To maintain your view, plant tall, deep-rooting species along the sides of your view and shorter plants in the middle.
- Avoid mowing along water's edge to prevent loss of essential root mass
- Avoid building too close to the water's edge and on the outer edge of river bends were erosion is more likely
- Build on upland areas and use permeable paths (made from wood, stone, or gravel) for access to the water
- Install septic systems outside riparian areas and keep them maintained
- Prevent livestock from damaging riparian areas by using fencing for short-term grazing or installing water gaps, hardened crossings, or offsite water.