Lake*A*Syst

HOMEOWNER'S GUIDE TO PROTECTING BIG PAYETTE LAKE

FACTSHEET 5: PREVENTING CONTAMINATION FROM STORMWATER RUNOFF

If you have the joy of living or recreating in the Big Payette Lake watershed you also have a special opportunity and responsibility to prevent pollutants from entering streams, groundwater and the lake. Payette Lake is the sole drinking water source for the city of McCall as well as for many homes around the lake. Currently the water quality is acceptable, but in recent years increasing human activities around the lake have contributed to deteriorating water quality. Recent conditions have alerted us to the urgent need for protecting our lake and preserving its many uses. It's time to take action.

Guidelines for taking action on your own property or as you are enjoying the lake have been created by the Lake Assessment System program (Lake*A*Syst) so that you too can be a steward of our lake. The program asks you to consider potential risks to water quality that could result from your activities. The following factsheet ("Preventing Contamination of Drinking Water") is the first in a five-part set of materials designed to assist property owners and the public in understanding what strategies we can use to protect and preserve water quality in the watershed. The sets cover these topics:

Factsheet 1: Preventing Contamination of Drinking Water Factsheet 2: Lawn and Garden	Factsheet 3: Roads and Driveways Factsheet 4: Landscape and Construction **Factsheet 5: Stormwater Runoff**

After you read the factsheet, you can digitally access a Homeowner Risk Assessment Sheet as well as an Action Checklist. These resources will help you identify any potential environmental risks related to Payette Lake and your drinking water, and guide you in taking appropriate action. You will find these resources and more at the Big Payette Lake Water Quality Council website: www.bigpayettelake.org and at the City of McCall's website: www.mccall.id.us

FOR ADDITIONAL INFORMATION:
Valley Soil and Water Conservation District, P.O. Box 580, Cascade 83611; (208)-382-3317
Central District Health Department, 703 N. 1st Street, McCall, 83638; (208)-634-7194 www.cdhd.idaho.gov. Copies of material on Big Payette Lake water quality may be obtained for free at the **Idaho Department of Lands** 555 Deinhard Lane McCall; (208-634-7125)

Sponsored by: Big Payette Lake Water Quality Council, the Idaho Department of Environmental Quality, and the Idaho Association of Soil Conservation Districts

PREVENTING CONTAMINATION FROM STORMWATER RUNOFF

Stormwater runoff is created when rain or melting snow flows over impervious surfaces and does not soak into the ground. As more of the watershed is developed with impermeable surfaces such as roads, driveways, roofs and parking lots, less water can soak into the ground and is forced to “run off”.

Increased flow from runoff leads to erosion of bare ground and along roadways. Sediments are then transported into streams and Big Payette Lake along with pollutants that may be on the ground or on roadways. Increased sediment entering the Lake can impact water quality, currents, shoreline erosion, and aquatic habitats. High flows of water across impermeable surfaces can accelerate erosion further downhill.

Your property in and of itself may not be a significant source of pollution, but the cumulative effect of pollution from all the properties in the Big Payette Lake watershed accounts for 14% of the total phosphorus delivery into the lake, which is very significant. On individual properties around the lake, it is the responsibility of the homeowner to reduce environmental harm by properly managing contributions to stormwater runoff.

What’s important is not only reducing pollutants in runoff, but preventing and minimizing runoff in the first place.

IDENTIFYING PROBLEMS CAUSED BY RUNOFF

Problem	Possible Cause
The water near the shore is cloudy.	Excess sediment reaching the water.
Oily rainbow film on the water.	Possible petroleum contamination.
Algal blooms, green scum, or abundant plant growth in the water.	Excess nutrients such as nitrates or phosphorus entering the water.
Washouts, trenches, small piles of sediment, leaves or debris found at the bottom of slopes.	Excessive runoff across the property which may eventually reach the lake.

Runoff usually consists of combined water from roads, driveways, roofs and yards, and can include:

Nutrients such as phosphorus and nitrogen from fertilizers. Additions of phosphorus can accelerate algae growth which in turn impacts aquatic life in the lake.

Bacteria and viruses from human and animal wastes.

Organic chemicals such as pesticides and petroleum products.

Heavy metals such as lead, copper, zinc and cadmium.

Sediment, which can be a composite of silt, clay, organic material, sand and gravel. Residential stormwater runoff is the largest single contributor to sediment and phosphorus in the lake.

REDUCING POLLUTANTS IN RUNOFF

Hazardous Household Products

TAKE ACTION

- When possible use products that are nontoxic.
- Read and carefully follow use instructions on the product label.
- Store the minimum amount of hazardous products.
- Do not dispose of household hazardous waste in the trash, storm drains, streams, sink, toilet, or on the ground.
- Hazardous waste can be disposed of during household hazardous waste drives held annually by Valley County. See https://www.co.valley.id.us/departments/TransferSite for more information on dates and locations.

Vehicle Use and Engine Maintenance

Cars and boats contribute pollutants such as heavy metals, oil and grease and other hydrocarbons through exhaust, leaks, spills, corrosion, and wear and tear of parts. These pollutants can be carried into waters by runoff or deposited directly into the lake from boats and watercraft.

TAKE ACTION

- Clean up oil stains; avoid outdoor spills of antifreeze, brake fluid, and other engine fluids.
- Wash vehicles at a commercial car wash or on a lawn that's not directly adjacent to the lake.
- Do not use cleaners that contain ammonia, chlorinated solvents, petroleum distillates, or lye. Buy and use only nontoxic, phosphate-free, biodegradable cleaners.
- Do not wash cars and boats where runoff travels directly into stream or lake waters.

Animal Wastes

Animal droppings can be troublesome in two ways. First, pet and stock wastes contain nutrients that can promote the growth of algae in streams and the lake. Second, these wastes are a source of gastro-intestinal diseases and bacteria that are quite harmful to our health.

TAKE ACTION

- Always pick up after your pet! Especially within a short distance of the lake.

EROSION PREVENTION

If you are planning new construction, landscaping, or putting in a new driveway or road, you need to consider the effects of these activities on the watershed. Removing vegetation or clearing an area and exposing bare soil creates conditions where soil can easily be washed into nearby water bodies.

Excessive soil washing into nearby streams buries the small gravel that is used by spawning fish. This sediment also carries excess phosphorus into the lake, which encourages algae growth and disrupts the ecosystem.

TAKE ACTION

- Make every effort to preserve native vegetation.
- Cover bare earth with a layer of straw mulch, fabric or bark.
- Replant any bare areas immediately after new construction activities.
- If you have rain-spouts and gutters, check the flow to ensure that the rainwater spreads out evenly where the spout meets the ground.

Protecting the Riparian Zone of Streams and the Lake

The riparian zone is the moist soil area, adjacent to water bodies, where natural vegetation grows. The thick vegetation serves to reduce erosion and acts as a filter for pollutants traveling to the lake surface or a stream. Overhanging branches also provide shade and a source of insects and seeds for wildlife.

TAKE ACTION

- Retain a high percentage of native shrubs and trees along the shoreline and streambanks.
- Minimize disturbances to riparian vegetation.
- Replace non-natives with native plants.
- Preserve a 50 -100 foot buffer of vegetation (preferably native plants) between bare soil, lawns, or gardens and the lake.

PREVENTING AND MINIMIZING RUNOFF

Planning ahead is the first and most important step in preventing or minimizing erosion due to runoff. Walk your property during and following a heavy rain to identify drainage patterns and areas of erosion you might need to address.

TAKE ACTION

- Minimize pavement, compacted dirt, and covered areas that prevent water from soaking into the ground.
- Plant new vegetation and preserve existing trees and shrubs to stabilize the soil.
- Limit clearing and grading on slopes and keep access roads and paths to a minimum.
- Use existing natural drainage systems such as gulches or any low areas instead of digging new ditches.
- Design culverts and drainage structures to handle excessive amounts of runoff; assistance is available from the Valley County Soil and Water Conservation District (382-3317; valleyswcd.org)

- Monitor and maintain drainage-ways so they don't fill up with sediment and are able to carry stormwater as intended.
- Incorporate a good gravel base into your private roads and driveways instead of using only compacted dirt.
- Sweep paved parking areas and walkways instead of washing them down with a hose. This prevents sediment, de-icer/salt, and petroleum products from washing off in runoff. Cover stockpiles of salt and sand with a tarp or store them in a building.
- Use paving stones instead of solid concrete for walkways; this allows water to seep into the ground instead of running off.
- Avoid creating paths straight down a slope because this causes erosion. Compacted soil on footpaths also promotes excessive runoff. Naturally-vegetated pathways are always best.
- Control erosion during construction by using temporary methods such as: diversions to carry water away from the construction site to where it can be safely dispersed; earth dikes or straw bales to trap sediments before they enter surface water.
- Near lakes and streams use only clean fill (free from debris and dirt) such as rock, sand, or gravel.
- If you are building a new house or garage, and design considerations are flexible, position rooftops so they are perpendicular to the slope instead of parallel, to slow down runoff.