Wabamun Watershed Management Council

How can we reduce nutrient loading?

Industry/Business

- Adopt the ideas suggested for cottagers and landowners to make your business a "green" example for others—especially relative to maintaining sewage systems if appropriate.
- Reclaim mined land to forests, rather than farmland, including restored wetland areas.
- Golf courses should look at ways to minimize fertilizer and pesticide use while ensuring buffer zones along waterways.
- Ensure any land disturbance for resource extraction includes adequate berms and erosion protection to protect waterways.

Municipalities

- Above all, be aware of what municipalities can and should do to reduce nutrient loading to the lake - see the *Lake Stewardship Reference Guide* published by the Association of Summer Villages of Alberta for detailed information.
- Large municipalities should consider becoming "accredited" to administer the *Safety Codes Act* and the provincial *Private Sewage Disposal Regulation and Standards*.
- Consider developing a stormwater management system that includes best management practices to reduce or eliminate the stormwater entering the lake.

Cottagers/Land Owners

- Maintain and inspect your septic system:
  1. Reduce water use to keep septic tank sludge well settled.
  2. Pump out your tank - holding tanks should have all collected materials pumped out routinely (i.e. weekly or monthly) while septic tanks may require annual pump out.
  3. Avoid septic additives - these additives can shorten the life of your septic field.
- Consider converting to a holding tank when upgrading your septic system.
- Reduce your lawn area - about 50% of rainfall can simply wash over short grass carrying with it fertilizers or pesticides. Consider using natural vegetation, especially along the shoreline.

"Grey water" from basins, bathtubs, laundry and kitchen **must be** directed to your septic system.

- Reduce use of fertilizers and pesticides - consider "grass-cycling" and slow release fertilizers.
- Replace hard surfaces with porous ones that allow runoff to soak in instead of washing away.
- Stock up on green cleaners including phosphate free detergents. Avoid anti-bacterial soaps.
- Hook up a rain barrel to your eaves-troughs to reduce runoff and provide a watering source.
- Pick up after your pooch - this is a major source of water pollution at some lakes.
- Consider retrofitting to low flush toilets.
- Don't remove shoreline or aquatic vegetation - this protects your property and is habitat for aquatic life – in fact **it is illegal to do so**.

How to improve water quality at Lake Wabamun:

Reducing Nutrient Loading

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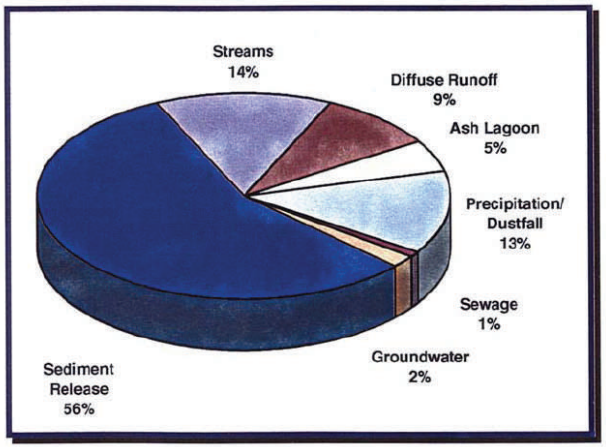
Why are nutrients an issue?

- Nutrients are the "building blocks" of life, however, when we allow too many nutrients to enter a lake undesired amounts of aquatic vegetation and algae will occur.
- Shallow, nutrient-rich lakes can either be in a clear-water state, dominated by aquatic plants (like Lake Wabamun) or a turbid water state, dominated by algae.
- Switching between states can occur due to increased nutrient loading or other stresses like large removals of aquatic vegetation.

What is the "state" of nutrients in Lake Wabamun?

- Currently, Wabamun is considered a slightly "Eutrophic" lake, meaning it is relatively high in nutrients and productivity.
- Sediment records indicate faster deposition rates for phosphorus in recent times, with a slight decrease since inputs of water from the Water Treatment Plant started in 1998.
- The release of phosphorus built up in lake sediments (called internal loading) now accounts for as much as 56% of total phosphorus releases annually.
- To prevent a possible change in stable state, further inputs of nutrients must be reduced.

What are the sources of nutrients in the lake?



Based on total phosphorus loading data for Wabamun Lake (1980 and 1981):

- 56% of phosphorus releases per year originate from nutrients already deposited in sediment - this could be reduced over time if external nutrient inputs decrease.
- The remaining 44% of annual phosphorus releases come from sources outside the lake, i.e. external loading.

How can we reduce external nutrient loading?

Farms & Ranches

- Maintain or restore riparian (stream edge) zones of vegetation to help intercept runoff of manure, fertilizer or pesticides.
- Always feed and water cattle away from stream edges - limit their access with fencing.
- Store and spread manure at least 50 m from water bodies.
- Maintain wetland areas, even if they are periodically dry - wetlands capture nutrients, collect storm water and recharge groundwater.

Boating/Recreation

- Aim for a low impact docks - a floating, pipe or cantilever dock will cause much less disturbance to a lakebed.
- Always refuel away from water if possible.
- When boating close to shore, drive at "no-wake" speed (10 km/h within 30 metres of shore) to protect vegetation and prevent erosion.
- Don't use soap in the lake, even if its "phosphate-free and biodegradable" - this simply means it can break down with the help of "soil" bacteria. Find other "green" alternatives to commercial cleaners for your boat.
- To reduce the impact of boat cleaning, use a "Wax n' Wash" routine. Before launching your boat, give it a thorough cleaning where run-off won't enter the lake, then apply a good coat of boat wax and polish. During the boating season simply slosh with water and clean with a mop.
- Find ways to eliminate producing grey water, collect what you do produce, and dispose of it properly on shore.
- If your boat has a holding tank or port-a-potty, you **must by law** dispose of its contents via an approved wastewater treatment facility, e.g. a pump-out system at one of the yacht clubs.
- Perform any bilge cleaning carefully and preferably away from the water. Do not pump bilge contents directly into the water.

Contact Us

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