

**The Idaho Pocket Guide  
To Lake Protection**



*Idaho Water Resources Research Institute*





Idaho's 1,300 lakes serve as source of pride and enjoyment for all of us. They provide us with natural settings where we can work, live and play. We visit lakes to swim, fish, boat, water-ski, sightsee,... They work for us carrying logs downstream to be turned into wood for our homes. They provide us with scenic environments where we choose to build our homes and pass our time.

This guide will help you better understand what you can do to insure that the lake you appreciate and need will continue to be what you want it to be. It will outline some of the problems facing your lake, identify other life forms that depend on it for habitat and give you a better idea of what a lake really is.



### *What is a Watershed?*

A watershed can be compared to a sink. The lake, a part of the watershed, would be the immediate area around and including the drain. The lake is the place where all the water in a drainage system ends up. This water, as it makes its way from the higher areas of a drainage system to the lower ones, carries with it organic and inorganic matter. This matter is called sediment, and the process is called sedimentation. Sedimentation is a natural process by which lakes gradually fill in, but man and his activities speed up this process. Home and road building, farming, timber harvesting, mining and recreation are all areas of human activity that can accelerate the process of sedimentation and change the trophic status of lakes. Trophic status defines the age of a lake and this ageing process is called eutrophication. An older lake, a eutrophic one, is nutrient-rich, shallow and usually green in color, while a younger lake, an oligotrophic one, is relatively nutrient poor, clear and deep.

### *What can go wrong with a Lake?*

Idaho residents, whether they live near or far away from a lake, need to learn how their presence can adversely affect lakes. There exists no single, easily identifiable problem-source, but many of our day-to-day activities can, in the long-run, combine to create a threat. It is, therefore, important for us to know how to alter our behavior when it proves to undermine a lake's well-being.

Sedimentation and cultural eutrophication are two problems that affect Idaho's lakes. These problems become worse as more and more people take up residence in the watersheds of some of Idaho's more accessible lakes, such as Coeur D'Alene, Pend D'Oreille, Priest, Spirit, Hayden, and Twin Lakes. The 1980 census indicates that Idaho is one of the fastest growing states in the United States. Growth is greatest in those counties containing the state's largest natural lakes; respectively, Kootenai (Lake Coeur D'Alene), Valley (Payette Lake) and Bonner (Priest and Lake Pend Oreille).



### *Its Up To You!*

The future of Idaho's lakes is up to you! For better or worse you will determine whether your lakes continue to be what you want them to be. Good land stewardship requires that landowners be aware and understand the possible impacts their activities may have on water quality. Impacts can be controlled or reduced by taking steps to preserve as much of the natural environment as possible by preventing runoff and associated pollutants from reaching rivers and lakes. Concerned citizens have already formed groups in Northern Idaho to promote lake management. These groups, however, depend on continued support from the general public to fund water related research and to pass legislation responsive to lake management issues. It truly is up to you!





### *What Can You Do?*

Individual citizen action forms the basis for all lake management. It is the concerned citizen that makes the difference, and in the following section of this guide you will learn what you, as a conscientious and concerned citizen, can do to maintain the value of your property as well as that of your neighbors.

### *Septic System Care*

Do not let your septic system pollute the lake. If your system is antiquated, it may need upgrading. Septic systems must be properly installed and maintained to function correctly. Some warning signs of system failure to watch for are:

- sewage odor
- slow running toilets and drains
- puddling water over the drainfield area

Some preventive steps you can take to make sure your system operates efficiently are:

- When installed, make sure your system is properly sited and designed by a licensed professional.
- Have the tank pumped regularly; every 3 to 5 years.
- Avoid use of phosphate detergents.
- Conserve water.
- Do not use your garbage disposal.
- Do not plant trees and shrubs over the drainfield; roots can crack or clog pipes.

Any concerns about the operation of your system should be directed to the local health district.



### *Boat Use*

Motor boats can be a direct source of nutrients to lake waters through exhaust emissions or an indirect source by agitating nutrient rich sediments. Some operational and maintenance tips that can reduce motor boat impacts on lake water quality are:

- Keep boat engines well tuned.
- Promote use of electric trolling motors.
- Promote use of 4-cycle engines over 2-cycle engines.
- Do not pump bilge water into the lake.
- Reduce speed in shallow areas to prevent sediment agitation.
- Use pump-out facilities at service docks for boat toilets.
- Prevent fuel leaks and spillage from filling tanks.

### *Aquatic Plant Control*

Aquatic plant growth is one of the bigger nuisances to lakeshore property owners that results from eutrophication. Plant growth interferes with swimming, boating, and fishing which are the pastimes that attract people to live around lakes in the first place. Steps homeowners can take to control and perhaps reduce the spread of these nuisance plants are:

*-Harvest plants by hand or by raking. Be sure you remove the plants from the water and dispose of them properly (compost or sanitary landfill).*

*-Remove plants using a mechanical harvester. These are "aquatic combines" that cut and collect the plants for proper disposal on land.*

*-Use (Aquascreen), a mesh material laid on the lake bottom to prevent root establishment.*

The best procedure is to remove the plants from the lake as they contain phosphorus and nutrients which go back into solution unless the plants are removed from the lake. If the plants are dried and burned on the beach the chemicals simply go back into the lake during the next high water period. There are also aquatic herbicides available to control plant growth. These are only recommended as a last resort as there can be unknown secondary effects to other aquatic life. Consult your county agricultural extension agent for advice on the use of these products.



### *Laundry Products And Household Cleaners*

Phosphates are a main ingredient in household soaps and detergents responsible for getting clothes "white" and "bright". Unfortunately, phosphates are also responsible for excess algae and aquatic weed growth in lakes and streams. Try to minimize your use of products containing phosphates. Check the label and select products with low or no phosphates (<0.5%). Here is a list of popular products low in phosphates:

*Laundry detergents: Ajax, All, Arm and Hammer, Dynamo, ERA Plus, Ivory Snow and flakes, Purex, Tide Liquid, Wisk and Sun*

*Cleansers: Ajax, 409, Bon Ami, Comet, Fantastic, Mr. Clean, Pine Sol and Soft Scrub*

*Dish soap: Ajax, Dawn, Ivory Liquid, Joy, Lux, Palmolive and Sweetheart*

In addition to careful product selection and usage you should not wash anything directly in the lake or at the lakeshore. This includes dogs, horses, and boats. These activities are a direct source of phosphate to lake waters as there is no benefit of treatment through a septic system.



## NOTES

### *Yard Care*

Yard care products can also be harmful to lake environments. Fertilizers contain phosphorus and nitrogen which, if over-applied, can run off or leach into lake waters and stimulate plant growth. Herbicides and pesticides can be toxic to aquatic life. Some ways to reduce the impact of these products on lake water quality are:

- Limit use of fertilizers to only the amount your lawn and plants need. Over application will just wash away into the lake.*
- Follow the directions closely.*
- Dispose of containers and unused products properly.*
- Use organic fertilizers where possible.*
- Encourage natural pest predators in your yard.*

Think twice about putting in a lawn if you do not already have one. Keep natural landscape and lawn trimmings from washing into the lake. Do not burn leaves or other refuse on the beach. Ashes can easily wash into the lake, providing a source of excess nutrients for nuisance plant growth.





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