

## Pesticides and Lake George

What happens when hundreds of pounds of pesticides and herbicides are routinely applied during a given year to a lake front or stream corridor property on Lake George (or within your watershed)? If your quantity of pesticide and herbicide use is much less than this, remember that the cumulative impact to the lake and watershed includes your neighbors' applications. In the southern United States, pesticides are called POISONS. If you have read their label, that's what they are. They indiscriminately poison or kill almost everything.

EPA labels were reviewed for 10 pesticides being applied on Lake George lake front properties. The pesticides included both herbicides and insecticides, with and without fertilizers. All of the pesticide labels indicated that the *Active Ingredients* were **highly toxic** or **extremely toxic to aquatic organisms, aquatic invertebrates and fish**. One pesticide killed honey bees, lady beetles and beneficial insects; one had adverse effects occurring only in dogs after extensive experiments had been conducted on various mammals (rats, mice, hamsters, gerbils, guinea pigs, rabbits, dogs, sheep and monkeys); one product stated: *Do not apply this product in a way that will contact any person or pet, either directly or through drift. Keep people and pets out of the area during application.* All products directed you to **CALL the POISON CONTROL CENTER: if swallowed; in eyes; on skin or clothing; or inhaled**. One insecticide/fertilizer could not be applied on grass or turf within 100 feet of a lake, stream, river, wetland or drainage ditch in New York State, and one of the products could not be sold, distributed or used on Long Island.

Have you ever wondered why the firm sandy surface that was on the lake bottom in years past (and may have been like that for the past 10,000 to 12,000 years since the Wisconsin glacier receded and created Lake George), has become up to 8+ inches of soft muck? Disrupting the natural food web may do this. Imagine a simple food chain where the *primary producers*, plants and algae (autotrophs that utilize sunlight and organic compounds to produce food) are eaten by the *primary consumers*, zooplankton and invertebrates (small animals or herbivores that are eaten by larger invertebrates and fish). The use of pesticides on your property may alter the base of that food chain so that the primary consumers that feed on the aquatic plants, algae and dead organic matter in the lake have been eliminated. What happens when you also decide to use fertilizers, and the unused or excess fertilizer washes into the lake (directly or through the many storm drains or streams that flow into Lake George)? The end result may be that plants and algae grow abundantly without predation, and eventually become the dead organic matter simply accumulating on the lake bottom each year.

**Do we really need to take this risk to have a lush lawn (are insects so terrible that we need to sacrifice the lake to live without them)? Is jeopardizing Lake George's water quality (Class AA-Special drinking water and a source of recreation and livelihood for so many) worth it? Are weed free lawns really that important that we can justify killing our bees, butterflies, birds, invertebrates, frogs and fish?**

### Read the Label before you purchase a Pesticide for your property:

A **pesticide** is used to kill insects, plant pathogens, weeds, mollusks, birds, mammals, fish, nematodes (roundworms) and microbes that compete with humans for food, destroy property, are a vector for disease or just seem to be a nuisance to humans. It may be a chemical substance, a biological agent (such as a virus or bacteria), an antimicrobial or a disinfectant. Although one might imagine that there are benefits to the use of pesticides, there are also very serious consequences of toxicity to humans, domestic animals and wildlife.

An **insecticide** is a pesticide used to kill insects in all developmental forms. Nearly all insecticides have the potential to significantly alter ecosystems. Many are toxic to humans and others are concentrated in the food chain. An **herbicide** is a pesticide used to kill unwanted plants. Herbicides are available in two main types: selective and non-selective. Many herbicides are synthetic and can be toxic to "good" plants as well as to animals and humans.

### Additional Facts you should know:

The EPA and each state register pesticides for use in the United States. The EPA requires that pesticide labels include the percentage of the *Active Ingredients* and the percentage of the *Inert or Other Ingredients*. EPA labeling changed in 1997 to 'allow' the non-Active Ingredients in pesticides to be identified as 'Other' vs. the previous label, 'Inert', as many of the non-Active Ingredients are **not 'Inert'**. Federal law does not require that these *Inert or Other Ingredients* in the pesticide be identified by name or percentage on the product label, only that the total percentage of the combined *Inert or Other Ingredients* in the pesticide is labeled. This is important to know, because the *Inert or Other Ingredients* are not included in the **Environmental Hazards** or **Hazards to Humans and Domestic Animals** listed on the pesticides' EPA product label.

**Roundup Pro** is a broad spectrum, non-selective systemic herbicide which has long been promoted as being safe for humans and the environment, while at the same time effective in killing weeds. **Roundup may be the most used herbicide on the market**. Many people assume that Roundup would not be on sale if it were not safe, or that it is safe as long as you use it according to the manufacturer's instructions. The Roundup label **CAUTIONS** that it causes **EYE IRRITATION** (therefore avoid eye contact) and states that the product is considered to be relatively nontoxic to dogs and other domestic animals. The **Environmental Hazards** on the label merely state that Roundup should not be applied directly to water. **Glyphosate** (the *Active Ingredient* in Roundup) is considered only moderately toxic to fish; therefore nothing on the label indicates that the product is a **Hazard** to aquatic environments. But it is the **Other Ingredients** in Roundup, the surfactant MONO818 (up to 59% of the product), which is highly toxic to fish (Folmar et al. 1979; Servizi et al. 1987) and may interfere with cutaneous respiration in frogs and gill respiration in tadpoles (Tyler 1997). University of Pittsburgh scientists propose that Roundup is lethal to life forms other than plants. When studying the effects of pesticides to 'non-target' organisms in a natural setting, Roundup caused a 70% decline in amphibian biodiversity with nearly all of the leopard frog tadpoles and gray tree tadpoles being eliminated by exposure to the herbicide (both of these frogs are native to upstate New York). Imagine the impact on the rest of the food chain. The **HAZARDS** from the **Other Ingredients** (the fact that Roundup may be highly toxic to fish and amphibians) is not disclosed on the label, because MONO818 is not the *Active Ingredient* in the herbicide.

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For more information on the potential impacts from pesticide or fertilizer use contact:

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