

MORE THAN JUST A WEED KILLER

Roundup, a widely used herbicide that is sprayed on weeds and seedlings, may be harming more than just undesirable plants. Recent studies from the University of Pittsburgh demonstrate that the herbicide has a dramatic impact on the mortality rate of certain amphibian species.

University of Pittsburgh biology professor Rick Relyea examined the effects of Roundup when applied in the prescribed concentrations on three species of North American tadpoles. In his study published in March 2005, a single application of Roundup killed nearly all larval amphibians within three weeks. Within 24 hours of its application, 68 to 86 percent of juvenile amphibians of all three species died. The study concludes that Roundup is lethally toxic to several species of frog during both their aquatic and terrestrial stages, and may well have a profound negative effect on amphibian populations as a whole.

Glyphosate, the active ingredient in Roundup, works by penetrating the waxy surface of leaves to affect the plant systemically. The product is commonly applied by aerial spraying. While bodies of water, including wetlands, are not targeted, inevitably some accidental spraying occurs there. More alarming, it is virtually impossible to avoid spraying ephemeral puddles and ponds where amphibian reproduction and incubation take place.

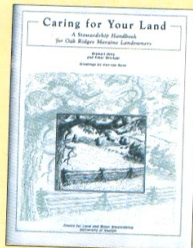
If glyphosate is toxic to terrestrial amphibians, what is its effect on other terrestrial organisms? Roundup's main producer, Monsanto Company, claims that its product is environmentally safe. But a number of independent research findings have discovered both direct and indirect harmful effects on birds and



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small mammals. These effects include, for example, a reduction in local bird populations, damage to taste and smell receptors in some rodents – so that they can no longer detect appropriate food sources – reproductive abnormalities in rabbits and declines in the presence of specific bird species, such as warblers and vireos, until the herbicide is no longer present.

Much of the research conducted indicates that Roundup's indirect impact is a reduction in the viability of an ecosystem where spraying has occurred, primarily due to the damage the herbicide causes to the food supply for local species. — HELENA RUSAK



Caring for the moraine

Conservation-minded landowners on the Oak Ridges Moraine should add a copy of *Caring for Your Land: A Stewardship Handbook for Oak Ridges Moraine Landowners*, by Stewart Hilts and Peter Mitchell, to their reading lists. Starting with an overview of the geology of the moraine, the 60-page booklet describes the various types of terrain and wildlife that are a part of the diverse Oak Ridges Moraine landscape. *Caring for Your Land* is intended to inspire non-farming property owners to look at their land in ecologically sensitive ways, such as allowing little used land to naturalize. Detailed drawings by Ann-Ida Beck illustrate many concepts in the booklet. **To order a copy (for only \$10), call 416-444-8419 or 1-800-440-2366, or visit our website at www.ontarionature.org and click on Shop.**