

a voice
for the natural
landscaping
movement



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Celebrating natives
plant and natural
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The Grapevine

By Maryann Whitman

Grape vine. My Cup-Plant Runneth Over

The notion of invasiveness in native plants is one that is distasteful to contemplate. Usually we prefer to say that a native plant is a "strong spreader" or an "aggressive spreader." At some point it may be necessary to stop splitting hairs. I'm thinking particularly of cup-plant (*Silphium perfoliatum*). It first caught my attention when it appeared in a news item as having spread aggressively along a riparian stretch in upper New York state, where it is not native. It had been introduced by a landowner and happily galloped on from there. It is now "potentially invasive" and banned in Connecticut.

In my own yard in southeastern Michigan I introduced it as seed some years ago, oblivious of the fact that it is not native to my own county. It is spreading quite aggressively. Fortunately it grows quite large, is hard to miss, and therefore easy to chop down.

This is a clear example of a native plant that behaves well in its traditional plant community, in its traditional habitat only to become a pest when moved by humans into areas that it might not have moved into on its own.

No-Till, No Problem

A brief article was published recently in the *Journal of Environmental Quality* relating no-till farming practices and increased emissions of greenhouse gases – most notably nitrous oxide. Since natural landscaping also employs essentially no-till methods it may be a short, though erroneous, leap in logic, in some minds, to connect natural landscaping and increased emissions of greenhouse gases.

It's important to know the rest of the story: The problem of greenhouse gases arises when fertilizers are spread on top of last year's crop residue of corn stalks or soy straw, landing several inches above the mineral soil. When the fertilizer is injected several inches below the surface of the soil, greenhouse gas emissions are no longer a problem.

Since natural landscaping does not use fertilizers in any case, it is safe to conclude that gardening methods using minimal soil disturbance will not result in the increased emissions of greenhouse gases.

It's All One Piece

In the early 1990s deformed frogs with oddly shaped, missing, and extra limbs were discovered in a pond in Minnesota. To date, 40 states have reported similar discoveries, and speculation runs rife as to any causal relationships – exposure to pesticides like Atrazine; exposure to ultraviolet light from the thinning ozone. Pieter Johnson, a researcher at the University of Wisconsin, says his theory is

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supported by the most solid evidence so far. He says that all the frogs with deformed limbs that he has studied were infected by flatworm parasites, called trematodes. He believes that agricultural and residential fertilizers are contributing to the parasite's growing numbers.

The relationship is not by any means a direct one. The parasite's life cycle involves birds, in which it releases its eggs, that end up in bird droppings, some of which fall in pond water and hatch; pond snails, which are the primary host of the parasite through maturity; and finally frogs, into whose joints the adult parasites burrow, interfering with limb development. Birds eat the frogs and the cycle is repeated.

Johnson believes that human land-use practices have contributed to the increased populations of trematodes. "With this trematode parasite in frogs, what we've been finding is that nutrient pollution or eutrophication, basically

elevated levels of nitrogen and phosphorus in aquatic systems, can have a really strong promoting effect on the parasite."

Here is the rest of the relationship that follows from what Johnson has found evidence for: eutrophication promotes the aquatic plant growth that feeds increasing numbers of pond snails. Eutrophication also decreases the percentage of dissolved oxygen in the water. The primary predator of the snail is the crayfish; crayfish require high percentages of dissolved oxygen in their habitat.

So there it is – all odds in this complicated tale are stacked in favor of the parasite. And by the way, while many states have banned the use of phosphorus in lawn products, it is still widely used in agricultural fertilizers and some dishwasher soaps. Phosphorus does not break down easily in soils – it can persist from 20 to 100 years.

Maryann is Editor of the Wild Ones Journal, and comes to the position with an extensive background in environmental matters of all kinds.