



## GARDENING ALONG THE WATER by Noreen Bryan

It's spring! The light wakes us earlier, the birds are calling their mates and defining their territories, and a renewed restlessness arouses winter-tired souls. For gardeners the itch to start planting stirs our hands and limbs. In darkest winter the seed catalogs arrived and they brought dreams of summer to those cold days, but now it is warm enough to prepare the soil and to begin planting. If you are not one of those long range planners who thought about the layout of gardens in the fall, then now is the time to ask- where do I plant the vegetables?; where do I locate the bounteous perennial blooms?

These are always hard questions. There are so many factors to consider. Vegetables need sunshine. Good, rich soil is desirable. A location near the kitchen door makes tending and harvesting convenient. Flowers are so beautiful to see from the picture window or at the entrance of the house or by the patio. When you own land that lies along the water- a pond or stream- then the health of these natural resources is critical to consider. How

can you protect your pond or stream and still have those tasty vegetables and beautiful flowers? Let's look at the requirements for your gardens and how they affect water quality.

**Sunshine:** Nearly all vegetables and many flowers require lots of sunshine. This requirement is directly contrary to the habitat that benefits natural waters.

On its own nature plants a thick buffer of trees and shrubs along the edge of ponds and streams. These woody plants regularly shed twigs, leaves and conifer needles which produce a thick duff layer of composting plant materials, which in turn, acts as a water quality filter that slows runoff from the land and purifies the water as it trickles through the layers. The shade from these plants keeps the water cool thereby providing a hospitable habitat for most fish and their young, as well as food and habitat for the insects that they feed upon. The shade suppresses excessive growth of aquatic plants.

**Soil:** Planting any garden, particularly the annual renewal of a vegetable patch, requires removing old vegetation and loosening the soil. Typically this is done by hand or with a rototiller. However, recent findings show that less mechanical tilling is better for the soil since it does not disrupt the beneficial organisms in their preferred layers of the soil. It is also better for your pond or stream. Bare soil is vulnerable to erosion. The shoreline of most ponds and streams is sloped towards the water. As the rain falls and the snow melts soil is carried down the hill into the pond or stream. This results in degradation of water quality. Mineral nutrients in the soil, such as phosphorus, can over stimulate the growth of aquatic plants and algae. Fine silt can lead to clouded water that suppresses light transmission to the lower layers of the pond or stream. In extreme cases the shoreline can be dramatically changed and the native habitat for fish and wildlife destroyed. It is best to locate your gardens to minimize erosion of soil into the water; till as little as possible and cover all the bare soil with a 2-3" layer of mulch. Leaves, straw, pine needles all work well.

**Fertilizers, Compost and Manures:** All these soil amenities make bigger, better tomatoes, but some are more suitable to a natural waterside setting. Compost is the best. The plant material that makes up compost, particularly if it is mainly leaves and pine needles, is very similar to the duff layer that occurs in nature. Nutrients are released slowly. Compost works well when turned into the soil and when used as a mulch on top.

Mineral fertilizers, the classic 5-10-5 mix and its more powerful cousins, give a quick jolt of vitality to vegetables.



Iris versicolor.

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Unfortunately they are easily transported by rain into the pond or stream where they give the same growth spurt to aquatic plants and algae. Manure is a middle ground between compost and fertilizer.

When you sum up the needs of the cultivated garden, you find that they are quite different from the habitat that occurs naturally along the edge of a pond or stream. This does not



*Arisaema triphyllum.*



Bloodroot.

mean, of course, that you cannot have a vegetable garden, but it does mean that you need to choose a location that is as far from the water's edge as possible - ideally this would be 100 feet or more. At the shoreline leave a natural buffer of native plants that sustain the water quality and provide habitat for wildlife - the wider the buffer the better. But when wide is not possible, even a 10 to 20 foot stretch of native plants is highly advantageous.

Your love for the beauties of your pond or stream might inspire you to split your gardening energies between the vegetable patch and the shoreline buffer. The easiest way to create a buffer is to stop mowing and let nature plant your shoreline. If you want to move more quickly

the best way to choose the

best plants is to let Mother Nature be your guide. Find a location along your pond or stream that is wild and undisturbed and observe what plants occur. The mix of plants varies from pond to pond, stream to stream depending on the conditions, such as alkalinity of the soil, speed of the water, or steepness of the bank. If you're a new gardener and do not know the names of the plants, invite your neighbor with the beautiful gardens to take a canoe ride on the pond or a walk beside the stream with

you. Native plants can be purchased from local nurseries. A listing of these nurseries can be found on the web at [www.vtwaterquality.org](http://www.vtwaterquality.org) under the Wetlands Section. Go to the "What's New" box on the right and look for "Sources of Native Plant Material in Vermont."

By all means avoid exotic, invasive plants, those foreigners that rapidly overtake a landscape. Not only are these plants destructive of the food and shelter which wildlife depends upon, but they usually cause unending labor and messes for the home owner. You only have to read one Vermonter's long time struggle with exotic, invasive plants, as told on page three, to be convinced. If you are uncertain about whether or not a plant is an exotic, invasive, "Native Alternatives to Invasive Plants" prepared by C. Colston Burrell for the Brooklyn Botanic Garden is a good source to consult. It identifies exotic, invasive plants and suggests native alternatives. This is a good book to have along when you go to the garden center to choose plants for perennial beds. It can help you avoid bringing home a plant that will cause a lifetime of regret.

Not all non-native plants are invasive. There are many old garden favorites that can be safely incorporated into your natural buffer. Primula, daffodils and other spring bulbs, are good candidates to choose for the inland side of a shoreline buffer farthest from the water's edge. They are beautiful to see as you look out a window towards the pond in the springtime. When these non-natives are only 10 to 20% of the plantings in a buffer they can bring a lot of joy to the gardener and not be a detriment to the other creatures who dwell in and around the water. Or even better you might want to plant some of the magnificent native spring bloomers that are gorgeous such as bloodroot (*Sanguinaria canadensis*), trilliums (*Trillium grandiflorum*), or Jack-in-the-Pulpit (*Arisaema triphyllum*). At the water's edge the native iris (*Iris versicolor*) is stunning. Happy Gardening!

### UPCOMING EVENT

#### Potluck Dinner with a Presentation on Loons by Ray Richer

For those of you who were able to see Ray Richer's photographic journal of life on the edge of Joe's Pond, you will be interested to know that Ray will be back this summer to show us his pictorial story of loons. Loons are his foremost passion so this presentation promises to be as good or better than last summer's. Our tentative date is August 6th at the Maple Corner Community Center. The presentation will be at 7:30PM following the potluck at 6:30PM. For more information watch for signs posted in the country stores and the Maple Corner Newsletter. Hope to see you there!

## LIVING WITH INVASIVES—A HARD SENTENCE by Susan McKenney

There are two plants that I would **not** recommend using as transitional plants for water or wet areas – for that is where they like best to live. Both happen to grow on our property, so I have become intimately (if not happily) familiar with them.

One is **Japanese Knotweed** (fleeceflower, Mexican bamboo, huzhang); scientific name: *Fallopia japonica*, also *Polygonum cuspidatum*. It was already well established on our land and that of several of our neighbors when we moved here. I can see why it might have been tempting to introduce it initially. While the brown and broken canes are unsightly in the spring – other plants fall into that category – it grows extremely fast (about a foot a day), makes a nice canopy in the summer and sprouts panicles of fall flowers that attract bees. Our property is not large and I enjoy sharing space with different species of flora and fauna, so it did not take long for me to learn that it doesn't like to share territory, as it may have in its native land, and aggressively replaces native plants.



Japanese Knotweed.

A little digging removes young plants (produced by heavy underground offshoots from parent plants), but once established a backhoe or a large team of people is required to remove it. Several years ago, as part of the staff of the Community College of Vermont, we spent 2 days voluntarily (we were soon sorry!) hand digging it out of a rock-filled area at the entrance to the Killington State Park. I discovered after the park experience that heavy mulching and digging of young shoots keeps the knotweed within bounds, and my husband and I have made a compromise that will work as long as we are able to put in the effort. Not so with our next intruder.

Sometime during the 1990s, I began noticing swaths of pretty white blossoms along Vermont's roadsides. They somewhat resembled Queen Anne's Lace, and when they suddenly appeared in my yard several years later, I was pleased.

A year later I saw the plant listed online as one of Vermont's invasive and noxious Weeds: *Aegopodium podagraria* L. var. *variegatum* L.H. Bailey. Too late for me, alas! I was looking for information about it because it was quickly – and I do mean quickly – overtaking the native non-woody plants along the bank between our yard and North Montpelier Pond. We do not use artificial chemicals, so digging and composting are self-imposed options. Digging up and composting **Bishop's Goutweed** (also known as **ground elder** and **housemaid's knees**) did not work in the normal manner. I have since kept it from overtaking other wild areas in our yard by carefully removing it when I first spy its by-now-familiar shoots in early spring.



Bishop's Weed.

Goutweed does not seem to spread easily by seed. The spots where it appears in our yard are areas where I was responsible for transporting it in my early efforts to get rid of it. I was successful in removing it completely from my husband's perennial bed, where it showed up after I transplanted a favorite plant that was growing near the original bed.

Vermont has made it illegal to transport this plant. I can see why. The flower is attractive and the plant is easy to dig up. Unfortunately, it propagates by white, filament-like, brittle roots that radiate out a foot or so from the shoots, about six inches underground. When you pull, like dandelions, where once you had one, you now have several plants. You have to remove every bit of root, an all-but impossible task. I place the plant material in heavy plastic bags and store for a year or two before adding to the compost pile. I say all-but impossible because if you get to it before it has become established, you can eradicate it. Removing well-established patches is much more challenging. When these are located along a shoreline removal may cause more damage to the pond bank than accepting (well, tolerating) this particular leafy neighbor.

Each landscape has its own set of "invasives" and the challenges of dealing with them. I was pleased to find that The University of Vermont has compiled a helpful list of quarantined plants in Vermont. The list also suggests alternative plants with which to replace them: <http://www.uvm.edu/mastergardener/invasives/alternatives.htm>

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