



# Cross Pollination

June 2011

## Co-ordinators Corner

By Claudette Sims

Many years ago on a garden tour, I had admired a beautiful plant specimen-tall, graceful, bamboo-like with creamy flowers that were alive with a variety of bees. It was truly a stunning architectural plant. I gushed with praise for the plant, but the owner of the garden warned me that I didn't want this plant- that I would regret it if he came me a piece of it. I suppose it was a kind of foreshadowing. But like those foolish people in the movies who always go down the dark basement stairs to investigate the spooky noise, I clutched my tiny *Persicaria japonica* (Japanese knotweed) and happily drove home to foolishly plant it in my garden. For many years, it gave me a lot of pleasure and I too had people come to my garden and remark what a gorgeous plant it was. It seemed to stay in a clump and didn't really wander so I arrogantly thought that I had "tamed" it.

Then I read "Bringing Nature Home" and began to better understand how dangerous and truly evil these garden invasives can be. When we travelled to the US, I saw firsthand how Japanese knotweed was destroying so much land along streams and then I started to notice it on roadsides when we returned home. So I made a decision to rid my garden of the JKW. We cut the plant down to the ground and covered the area with a thick black plastic sheet for a month. When we removed the plastic-ta-dah! There was the JKW still growing strong, albeit a bit paler. So we covered the area again and then watched horrified as the plant, like some kind of zombie trying to rise from the grave, pushed the plastic up as it grew. So we decided to dig it out and were shocked to discover a huge woody root system that was probably a meter wide and at least 30 cm deep. We hacked at it with an axe only to realize that now we had a million little bits of root, all of which would grow a plant. I spent countless hours every week digging out shoots-for 2 years. The attack on the plant seemed to have triggered some kind of super defense mechanism to survive and I started seeing the evil red shoots pop up further and further from the original plant site. I will admit that we got desperate and a bit scared at this point and got out the Round up and sprayed it over and over-for more than 2

years.

I am happy to report that today I found only about 8 tiny shoots still growing and easily dug them out. But the war isn't over yet. I will have to watch the area closely for probably a few more years before I give it a clean bill of health. And I must be ever vigilant not to move any of the soil from that tainted area to another garden location or worse to an unsuspecting friend's garden. (At one point in this battle, I had given my son a hosta from that area and was horrified when I visited his garden to see the familiar red shoots!)

I've learned my lesson, but there should really be some kind of pledge that all gardeners are required to take. Repeat after me:

I, (insert name) promise

- to stop purchasing/planting invasive plants and to remove them from my landscape
- to add more native plants to my garden
- to not allow invasives such as Goutweed to be sold at my Hort society plant sale
- to yell "You fool, you've doomed us all!" at the sight of invasives in the garden

Nursery creates an innovative water recapture system

## Investment in conservation — and security

BY SARAH WILLIS

The green industry lives and dies by the weather. You can run a LEAN operation, with the most talented craftsmen and advanced technical knowledge, but if Mother Nature doesn't co-operate, the business will suffer.

This realization led Sheridan Nurseries' management to take a good hard look at the irrigation practices at its 870-acre operation in Glen Williams, Ont. Sheridan was required by the Ontario Ministry of the Environment (MoE) to apply for a Permit to Take Water from its local source, the Credit River, every year. The Credit River runs over 1,000 km from above the Niagara Escarpment and drains into Lake Ontario at the Port Credit area of Mississauga. It is highly valued as a naturally-maintained trout stream within Canada's largest urban area. Sheridan's

vulnerability became apparent, as managers wondered what would happen if a Permit was ever denied.

“We noticed a change in local precipitation, combined with heavy housing growth in the surrounding area, that will probably deplete the natural aquifers and lower water tables,” explains Pieter Joubert, vice-president nursery operations. “Some of our domestic wells at the residences housing our off-shore labour started to dry up, and we knew we had to do something to protect our water resource, and build in capacity for the company’s planned expansion.”

“We met with representatives from the MoE to ask, if we built an irrigation system that allowed for extensive water recapture, clean-up and recycling, whether would we need to go through the annual water permit process.” Joubert believes Sheridan Nurseries was at the forefront of doing something of this scale, saying, “the Ministry was very interested with our proposal.”



### **Conservation first**

In addition to the recapture system, the nursery took a fresh look at the way it irrigates crops. “Our goal was to increase production capacity by 40 per cent in a high water-usage area, while decreasing water use by 30 per cent,” Joubert explains.

Working toward its conservation goal, the nursery gradually changed to drip irrigation in its liner beds wherever feasible. Drip irrigation is extremely efficient, as water is applied straight to the root zone, with less evaporation, and flow can be modified for specific crops. Sheridan has seen 60-80 per cent water savings using drip irrigation, compared to conventional overhead systems.

### **A capture pond that works**

The next step was to figure out how to recapture, filter and store irrigation water, so it could be reused, minimizing the need to draw water from the Credit River. The project was three

years in the planning stage, during which, Joubert says, the MoE introduced more stringent water-taking regulations, which further underscored the company's commitment to water stewardship.

The water recapture system is made up of five parts:

The **silt-out pond**, where irrigation run-off and rainwater collect through a large open ditch and tile drains in the nursery fields. Nearly 400 acres of cropland drain into the silt-out pond, where sediment and debris are given a chance to settle. The water is then channelled to an engineered wetland.

The 1.5 acre **wetland**, or marsh, was created to act as a natural bio-filtration unit. Plants were chosen to utilize and absorb toxins, nitrates and other pollutants, so water can be reused in the nursery. The wetland has the added benefit of providing a natural habitat for plants and wildlife.

After flowing through the marsh the water is collected in a **wet-cell**, or holding pond, which allows any remaining sediment to settle out before being pumped through a berm into the top of the huge pond.

The **main pond** is a 3.5 acre, 32-ft. deep behemoth that holds 32,000,000 gallons. Joubert notes that fortunately, the pond was situated on top of some heavy clay, which created a natural liner. All the soil removed from the dig was piled around the site to create a substantial berm. Water is fed in from the top of the pond, and drawn out through the bottom toward the pump house.

Joubert says top feed/bottom draw has three benefits. It keeps the water more fresh and aerated and, as the water is drawn across the bottom of the pond into a deep well beneath the **pump house**, the system is already pressurized by the weight of the water, so lighter pumps can be used. Lastly, the wells give them an immediate and accurate read on the water level in the pond.

### **Impressive engineering**

Joubert notes this is one of the few irrigation systems that can pump water throughout winter. Because the pond is deep, the pipes are underground and the system is already under pressure from the wells, water is available 12 months of the year.

A critical part of the system was that water needed to be able to flow both ways through main pipes in the irrigation system. When the pond level gets too low, supplementary water is pulled up from the Credit River to top it up. Twice a year, in spring and fall, the pond level is drawn down and replenished with 30 per cent fresh water from the river. This helps to re-

duce a build up of salts and nutrient concentrations in the irrigation water. Electronic flow meters help manage the amount of water transferred in and out of the pond.

### **Industry recognition**

This innovative project was recognized with the Environmental Award of Excellence at Landscape Ontario's annual awards ceremony in January 2011. The system took three years of planning and construction was completed in two and a half years, almost year ahead of schedule.

## **Arisaema triphyllum Jack-In the -Pulpit**

**By Doris Calder**

Jack-In-the-Pulpit has the unique ability to change sex depending on how much food it has stored in its roots.

When there is little food, the plant is male , whose only job is to produce male flowers and tiny pollen grains. After this he can relax for the season and build up food reserves . When food reserves are larger he changes into a female. The females work is much more laborious. She produces not only female flowers but also produces seeds surrounded by thick , juicy pulp. The following year, if she's too tired she can just take a vacation and go back to being a male!