

Lotus Cultivation in the Pacific Northwest

Lotus is the common name for plants belonging to the genus *Nelumbo*. This genus contains two species: *Nelumbo lutea*, the 'American Lotus'; and *Nelumbo nucifera*, the 'Sacred Lotus'. The two species are indigenous to opposite sides of the world, but many hybrids were developed by plant breeders in the twentieth century. Also, hundreds of varieties and cultivars of *Nelumbo nucifera* were developed in the Orient during historical times.

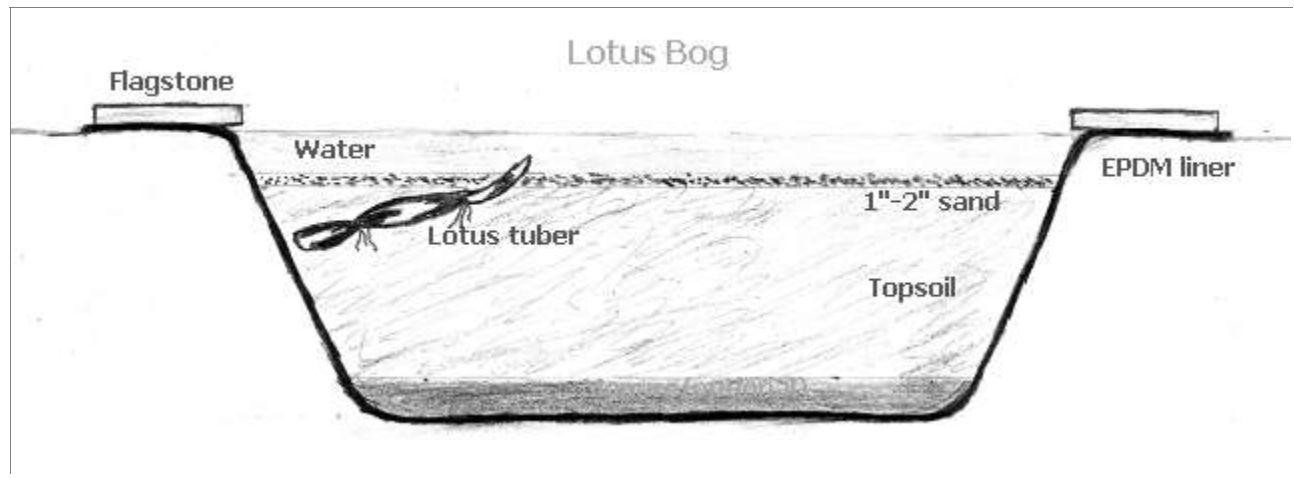
I think it's fairly safe to assume that after having read the preceding statements, your first question will be "If this plant is so great, why haven't I encountered it in western Canada?" The answer, I'm afraid, is either your west coast spring or your prairie winter; depending upon how far west you live. Lotuses, although reasonably tough perennials, are only reliably hardy outdoors to zone 5, which pretty much rules out a Saskatchewan January, if left unprotected. On the west coast, we have a different problem; namely our long, cloudy, cool springs which, in a bad year, can last right up until late June. Lotuses, in their dormant tuber stage, are quite content to spend winter buried in the mud of an iced-over pond, but when spring arrives, they want it warm and that's something that they're not likely to get in a west coast pond in early May.

Now, before you dismiss this remarkable plant as unsuitable for a coastal water garden, you should know that there is a simple solution to the cold pond problem; namely, forget about the pond altogether and dig yourself a lotus bog. A lotus bog is basically just a small pond, but instead of having to hunt around for a spot to stash all that excavated soil, you just dump the dirt back into the hole after the EPDM liner or pre-formed shell has been installed; assuming of course that the soil is a good, heavy loam. If the quality of your soil is questionable, you may have to bite the bullet and bring in a yard or two of gardening-grade topsoil; the heavier, the better. The goal is to construct a miniature wetlands environment consisting of a 45-60cm (1.5-2 feet) deep layer of rich mud covered by 5-10 cm (2-4 inches) of water; 16 square feet of surface area is a good, average size for a lotus bog. The location of the bog is also important, for the lotus prefers a sunny site, but unobstructed morning and late afternoon sunlight is perfectly adequate, even on the west coast. A bog constructed in this manner simplifies lotus cultivation in several respects:

- 1) The lotus bog will warm up much faster in the spring than a pond of equal depth.
- 2) Lotuses are adverse to confinement. Your bog will allow the plant to "stretch out" and maximize nutrient uptake.
- 3) You avoid the laborious and delicate task of division and re-potting. A potted, full-sized lotus in a typical 17 inch diameter by 13 inch deep 'lotus tub' (which weighs about a hundred pounds, wet) will usually need to be divided and repotted in late winter, before the growing tips become vigorous runners. A good work-out, but not necessarily fun.
- 4) Winter protection is not an issue. Both species of lotus have an innate self-defense mode against the harshness of winter, and the various hybrids generally follow suit. When *Nelumbo* senses autumn's falling temperatures, the runners dive deep into the mud and form starchy, over-wintering tubers. Your bog will provide the protection your lotus seeks and each tuber will produce one or more growing tips in the spring, thus the cycle begins again.

Although it may be possible to successfully over-winter lotus outdoors in climates colder than zone 6 by digging the lotus bog deeper than the frost line, a less arduous technique has been practiced for centuries in the northern regions of mainland China. In these areas, the lotus tubers are carefully removed from the shallow marshes in late fall, after the aerial leaves and stems have experienced frost and turned brown. The tubers are then buried in damp sand or peat moss and stored in cool root cellars until spring; in much the same way that root vegetables or tender bulbs are stored in western countries. If you have opted to grow your lotus as a containerized pond plant or a patio specimen; in late fall you would remove the plant from its pot, wash off the soil, and then trim and store the tubers in the same manner. Water gardeners in zone 6 areas or warmer, often prefer to over-winter the lotus in the pond at a level deep enough to protect the plant from freezing, and tackle the division and repotting chores in March or April, before the lotus has awakened. The lotus tuber, which looks like elongated links of sausage, must always be handled carefully in case the brittle growing tip is snapped off; an often fatal injury. If you have purchased a lotus by mail, this same caution applies when unpacking your treasure, as your lotus will be shipped to you as a bare-root tuber.

Regardless of whether you are planting your lotus in a bog or a container, your preliminary step will be saturating the planting soil with water. A wheelbarrow is a convenient tool to use for this task. Simply shovel the required amount of soil into the wheelbarrow and begin adding water, a little at a time. The technique is exactly the same as mixing cement. The soil is turned and chopped until you have achieved a 'wet concrete' sort of consistency. The mud is then shoveled into your bog or container up to about 4 inches below the rim. If you are creating a lotus bog and are determined to maximize the flower production of your plant, you can spread a layer of well-rotted cow manure on the bottom of the liner before adding the mud. This little tip is not advisable for potted lotus in the pond, as the nutrients released by the manure will probably result in an algae bloom like you would not believe. Once your preparation work is done, you are ready to plant the tuber. Using your hand or a trowel, you cut a groove in the mud deep enough to lay the tuber in at a sloping angle, with the growing tip slightly protruding above the mud and the dormant end buried out of sight. Careful with that tip, now! The growing tip should be pointing towards the center of the bog or pot, as this will develop into a runner which will branch off and spread throughout the mud, producing aerial leaves and flowers as the season progresses.



The actual planting timetable for your lotus is determined by the hardiness zone in which you live, because the lotus tuber with its tender growing tip must never be directly exposed to frost or ice. On the west coast, the lotus can be planted outside in late March, but remember to maintain that 2 inch to 4 inch layer of water in the bog in order to protect the lotus from late frosts. In all zones, if you are planning on growing a lotus as a containerized pond plant, it is normal procedure to delay the planting of the tuber until it is safe to have only a shallow layer of water over the plant when the pot is placed in the pond. A lotus placed too deeply in the pond, particularly in the Pacific north-west, will simply refuse to grow. Water gardeners on the west coast who would like to try a lotus in their pond should consider placing the potted tuber in a cold frame or greenhouse from April until possibly June. Your reward for this extra effort will be a larger, showier plant that will flower sooner in your water garden than a lotus which has spent the spring sulking in a cold pond. A temporary cold frame can also be used to accelerate the growth of a bog-planted lotus, a technique which coastal gardeners of tomatoes and melons are well familiar with.

Although mail order aquatic plant nurseries are the traditional source for lotus tubers, the increased popularity of water gardening has prompted some garden centers to stock potted lotuses in their pond plant section. These large, eye-catching specimens are not cheap, but the visual impact that a blooming lotus gives to the pond or patio in mid-summer is undeniable. Just be prepared to get your hands dirty the following spring.

Jack Wootton
Hawaiian Botanicals Inc.