

Winterizing the Pond

Fall Clean-up: This is an excellent time to catch up on maintenance left over from summer. Any debris or decomposing plant material that accumulates in the pond can not only be harmful to the health of your fish, it can also feed algae when spring arrives. A simple skim net will allow you to remove any surface debris and material that has collected on the bottom. Preventing further debris from falling into the pond is another area not to be overlooked. This can be accomplished with netting to cover the surface of the pond and prevent leaves from falling into the water. While not visually appealing, the netting only needs to remain over the pond for a few weeks to catch most of the leaves.

Feeding Fish: As cold weather approaches, fish metabolism will slow down. For this reason, it is important to have a thermometer to monitor the water temperature and feed fish accordingly. As the water cools, gradually cut back on how often you feed. Below 50° stop feeding altogether. It is also a good idea to switch to a wheat germ based food that is easier to digest, yet still allows the fish to continue to bulk up before entering dormancy.

50° and under	No food at all
51° to 60°	Feed once a week
60° to 65°	Feed every 3 or 4 days
65° to 75°	Feed every day
75° to 80°	Feed 2 - 3 times a day
80° to 85°	Feed 2 - 3 times and increase amount to no more than fish can eat in 5 minutes
85° and above	Decrease amount due to possible oxygen depletion

Fish and Water Circulation: Waterfalls or fountains add cold air into the pond water. As a result, many people with koi choose to disconnect those features and just circulate water below the surface. Koi owners will also lift the pump off the bottom of the pond in order to leave a layer of water undisturbed for the dormant fish. Depending on the stocking level of fish, it should not cause problems if the surface of the pond freezes over for a short period of time; however, many people use a floating pond de-icer to keep a section of the surface open to allow for gas exchange.

Filters: Most filters are removed from the pond, cleaned, and then stored until the arrival of spring. In the case of a biological filter, the beneficial bacteria are inactive below 50-60° water temperature. As a result, it is not necessary to operate the filter throughout the winter. Ultra-violet lights are another component that it is best to remove for the winter. If you choose to leave any filter outside through the winter, it is important to either dry it completely or else continuously circulate water through it to prevent freezing and cracking.

Pumps: You may choose to remove your pump prior to cold weather, but in our mild climate, you can enjoy water features year around. In short freezes, a running waterfall can successfully keep an open hole in any ice that forms on the pond surface. However, during a prolonged freeze pumps should be turned off. If your pond completely freezes over, water from the waterfall can spill across the pond surface and out into the surrounding garden. In the case of a stream, the water can freeze in the streambed before it can return to the pond. In either case, the result is an empty pond and possible damage to an overheated pump. Pumps plumbed with flexible PVC hose can be turned off anytime without worry; however, hard PVC pipe can freeze and crack without water circulation. If you have used hard PVC we recommend that you turn off the pump anyway. It is much cheaper to replace cracked pipe than a burned out pump. **Remember, never let the pump freeze.**

Plant Care: There are three main categories of pond plants: hardy, semi-tropical, and tropical.

Hardy plants are those that will winter over in your pond without any special care required, then will regrow in the spring. The majority of plants we sell fall into this category including hardy water lilies. Hardy lilies will winter over as long as their crown does not freeze. In our Willamette Valley climate, a depth of 18-24" is usually sufficient. There are a few hardy plants that require some protection. These include *Saururus cernuus* (Lizard's Tail) and *Pontaderia cordata* (Pickerel). These varieties should be dropped deeper so that the top of the pot is at least six inches under the water to protect the plant from freezing.

Semi-tropical plants are those that will winter over with some protection. Although many pond owners simply drop them to the deepest section of the pond (at least 18" deep), it is safer to bring the plant into an unheated garage or cold frame. It is important not to let the plant completely dry out. The following is a list of semi-tropical plants.

Canna sp.
Cyperus alternifolius (Umbrella Palm)
Hedychium coronarium (Butterfly Ginger)
Ruellia brittoniana (Bluebell)

Tropical water plants don't go dormant in the winter. For this reason, they require a protected environment such as a heated greenhouse where they can receive necessary warmth and light to continue growing. Many tropical plants can also make good houseplants through the winter given the right conditions including water and light. Here is a list of tropical plants we sell.

Alternanthera rubra (Ruby Leaf Creeper)	Hibiscus manihot (Sunset Hibiscus)
Colocasia (Taro)	Hydrocleys commersoni (Water Poppy)
Cyperus giganteus (Mexican Papyrus)	Nymphoides geminata (Chocolate fringe)
Cyperus haspen viviparous (Dwarf Papyrus)	Sagittaria montevidensis (Aztec Arrowhead)
Cyperus papyrus (Egyptian Papyrus)	Wedelia trilobata (Water Zinnia)

Most floating plants are also tropical. The most popular are *Eichhornia crassipes* (Water Hyacinth) and *Pistia stratioides* (Water Lettuce). Due to their high light and water temperature requirements, it is best to treat them as annuals and remove them from the pond in fall.

If you did not see a particular plant that you purchased from us on this list, chances are good that it is hardy and will go dormant for the winter before reappearing in the spring. Our staff is happy to answer any questions you may have about particular plants.



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