



## Preparing Your Pond for Winter

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Understanding the process of transitioning a pond through the seasons is very important. With good techniques and products, the change should be easy and seamless. The following guidelines should help you to better understand the process.

- **Fall Preparation**

As air temperatures begin to drop, so do water temperatures. During this temperature change, the needs of pond fish will change as well. It is very important to protect fish from changing surroundings, including falling debris and decaying leaves.

- **Fall Feeding-Planning Ahead**

When temperatures start to dip in early fall (September/October), you should start monitoring the temperatures as fall progresses. Wheat-germ-based food is ideal to transition fish in (and out) of winter, because it is highly digestible at lower temperatures. This is especially important as in the colder months; fish metabolisms and the pond's ammonia-reducing biological activity are greatly diminished.

### Preparing the Pond

Fall is the best time to clean out your pond (before water temperatures fall below 50°). This is recommended because the fish will still be active and less likely to sustain injuries during cleaning.

Scoop fall leaves from the surface with a fine net. You may want to pump some of the water out of the pond to expose the planting shelves around the pond. This will make it easier to remove by hand leaves that have adhered themselves to pond edges and shelves. Using a hose nozzle, blast off accumulated debris and sludge around the pond shelves and edges, and then remove any remaining debris with a net or pond vacuum. When replacing water after cleaning, remember to add a water conditioner to remove harmful contaminants like ammonia, chlorine, chloramines, and heavy metals. You will also need to add cold water dry bacteria once a month to help remove any extra decaying leaves and twigs you may have missed.

Once your pond is clean, it's a good time to add a pond net in the presence of nearby trees for protection from falling and blowing debris. Try to suspend it at least 18" above the surface. Securely fasten the net around the edges to prevent leaves from finding their way underneath. However, if you have frog inhabitants, it is helpful to leave a small opening or two to provide them access to and from the pond. Avoid letting the net sag into the water. Not only will this create a hazard for birds and fish, but leaves will collect in the submerged area and decay.

### Don't Forget the Plants!

Plant life can also be a source of debris. As marginal and deep-water aquatic plants begin to die back, prune dead stems and leaves to prevent decay in the water during the winter.



Before the first frost, remove tropical and non-hardy aquatic plants. They can be stored indoors in a sunny location. Most of the plants can be treated like houseplants. Just remember to spray the plants down with a soapy water solution to remove any unwanted guests (pests) before bringing them in.

For marginal plants in baskets around the perimeter of the pond, move them into slightly deeper water to prevent them from drying out and freezing in pond ice. Hardy water lilies can be left in the deep end of the pond over the winter. Bog plants can be insulated with straw or a commercial insulating material.

## **Close the Pond Up for the Winter**

The first step is determining when you should shut down your pond equipment (pump, filter, UV clarifier, etc.). If winter temperatures are moderate, continue to run the pump to keep the pond surface from freezing. Once temperatures become more extreme, you'll want to shut the pond down for two reasons: First, the pump will mix colder surface water with slightly warmer, more stable temperatures at the bottom where fish take shelter and hibernate. Second, it risks the chance of diverting water out of the pond and emptying when flowing water begins to form ice, especially on water features like waterfalls or streams.

You may want to store equipment indoors and out of the elements. It's also a good idea to clean and inspect equipment and replace any broken components. When shutting down pumps, filters, or any other equipment, remember that if you store equipment outside or in any unheated space, you should be sure there is no water left in the device that can ice over and cause the body/housing to break. If kept inside, it helps to put the pump, if it's submersible, in a bucket of water to keep moving parts and seals wet.

## **Winter Pond Equipment**

Gases produced by decomposing organic material are toxic to fish when trapped beneath ice covering the pond's surface. A de-icer is designed to keep an area of the pond ice-free during the winter, allowing harmful gases an escape through the opening. In small ponds, a de-icer is especially helpful in preventing ponds from freezing solid. For fish safety, it is extremely important never to break ice on the pond, because shock waves can be detrimental, and at times fatal to fish.

There are energy conserving de-icers and aerators designed specifically for ponds that are inexpensive to run. As an alternative, you can melt a hole daily by setting a heated pan of warm water on the surface. Either method of creating an ice-free opening will let pond inhabitants breathe, maintaining their health and longevity.

Remember, winter can be stressful on a fish's immune system. De-icers and aerators alleviate stress during the winter, making it more possible for them to withstand diseases that are more prevalent in the spring.



## **Caring for and Feeding Fish throughout the Winter**

It is best to leave fish in the pond during the winter, provided the depth of the pond is adequate (18" or deeper) and there is little to no water circulation. The denser, warmer water will sink to the bottom of the pond, where it will be insulated by cooler surface water or ice, and fish will gather in this deep, warm area. It's important, however, that some types of fish, such as fancy goldfish with ornate tails, bubble eyes, and lion heads, who are sensitive to colder weather, are brought indoors.

As winter approaches, you should monitor pond water temperatures daily. When temperatures fall below 39° (note: many koi keepers stop feeding koi when water temperatures fall below 50°), you should stop feeding the fish altogether. First time pond keepers may worry about not feeding the fish, but you can rest assured that your fish naturally rely on stored energy reserves to sustain them throughout winter months.

## **Fall/Winter Pond Checklist**

Remember to refer to this checklist, as these few steps now will ensure the survival of your fish through the winter, as well as a successful pond season next year.

- Reduce the number of leaves falling into the pond with netting or remove them with a pond net
- Clean the pond as outlined above
- Cut back dead or dying aquatic plant foliage during the fall
- Purchase a wheat-germ-based pond food developed especially for spring and fall diets
- Disconnect the pump, filter, and UV clarifier before water freezes
- Store filters indoors (if suggested by manufacturer's instructions)
- Purchase (if you don't already have) pond de-icer or aerator ready for installation. This will keep a small opening on the water's surface, allowing noxious gases to escape