The Mvth

There seems to be a myth about keeping fish along with a water garden. Some of us who maintain fish in our water gardens find the fish eat or disturb our water plants, while others find no such problem. I'm one who found that my KOI loved to disturb and eat my water plants. But, I know that there are others who will swear their fish are good and would never disturb their plants.

At this point I have partially solved my problem by providing my KOI their own pond. I must admit that I do add plant material to their pond, but I start it out in my water garden and then introduce it into their pond after it has established some root structure. The KOI still eat some of the leaves and flowers, but the plant seems to stay ahead of them, or I swap the plant out for another one.

I plan on trying a different feeding program where I will add more vegetable matter to their menu. I do keep goldfish in my water garden and as long as they stay small they don't seem to disturb my water plants.

Fish Pond Construction

Ponds should be constructed to one's own tastes and needs, with some basic understanding of fish needs. Fish need protection, space for movement, clean water and some ice-free water. A fish pond should have some places where fish can hide to protect themselves from other animals and the summer sun.

Fish need space to move both horizontally and vertically so they can adjust to water temperature changes. A very shallow pond can become very warm in the afternoon sun. Clean water can be achieved not only with mechanical and biological filters, but with a bog. Passing pond water through a bog filled with plants can filter the water as well as any other type of filter. Ponds that are shallow may freeze solid, and this can kill your fish. Also, ponds that are not kept open to some extent during the winter may also kill your fish.

For the reasons stated above, I would recommend an "ideal" pond for fish to be one that is a minimum of three feet deep for at least a third of your pond size. Where possible, install a bottom drain and skimmer. A bottom drain is not always possible because of pond location, but they are great for cleaning the pond bottom.

A skimmer is used to keep surface debris from falling and sinking into the pond. Waterfalls and small pools are great for collecting debris and much easier to clean than the main pond. Pumps should move at least one half of the pond's volume of water each hour.

Filtration

When you maintain fish, it is wise to filter the water of fish waste. There are many ways to filter the water, and some a better than others. I will discuss how I filter my ponds and you may do it differently. I filter my water garden pond with an up-flow filter. My up-flow filter passes the water from the top of a 55-gallon container through a three-inch pipe to about 8" from the bottom. The pipe sits on a grate which is supported 8" off the bottom of the container by pieces of 3" pipe.

On top of the grate I place large rocks, lava, pea gravel, and sand or Balance (a ceramic like rock). This mixture should come just under the outlet to the pond. A flush valve should be placed at the bottom of the container. Both the exit to the pond and the flush valve should be at least 1". I constructed a blow pipe out of 1" PVC pipe which allows me to force air through the rocks. The piece sitting on the grate should look like a square or rectangle with holes drilled into the PVC. The blow pipe extends from the square or rectangle up passed the 3" inlet. Water enters the 3" inlet pipe at the top, travels down to the bottom, up through the rock and out the outlet pipe to the pond.

My KOI pond has an up-flow filter, but the water enters at the bottom of the container and flows up through the rock mixture and is pumped out to the pond. Although this system removes much of the large material, the small material stays suspended in the pond water. I also have a 40-watt UV light connected to the outlet line on the KOI pond filtered water, This light is used to kill green algae.

Animals

There are four-legged and feathered animals that seem to be attracted to fish of any kind. I have not found a foolproof answer to discouraging these kinds of animals, but there are some general hints I can pass along. A shallow pond 18" to 24" or less is an invitation to all animals. Container gardens with fish are also invitations to animals. Other kinds of pond creatures (i.e. frogs) tend to draw feeding animals.

There are many types of contraptions that are made that may limit your animal encounters, but I have not found any too successful. The best advice is to build a deep pond, 3' or better, with no ledges. This is great to look at fish, but no good for water plants.

My watergarden pond is about 3' in the middle, with two rows of shelves. The first shelf is I' and the second about 18". In the summer I place two cement blocks and split the deep part of the pond into thirds. On top of the cement blocks I place a large stepping stone. As I sink the cement

blocks I place a board under them so they will not harm the liner. These stands provide protection for the fish and a stand for waterlillies.

Last year I lost many goldfish to the Blue Heron, but after many weeks I found that some of them avoided the beak and stayed hidden. I lost no KOI to the heron because their pond is deep (4') with only the pond sides to stand on.

The best product to keep the animals out of your pond is bird netting, but it has its drawbacks for water gardens, where tall plants make the netting almost impossible to use. I used it successfully on my KOI pond because the pond is raised a few inches above the water, so it didn't impede the water plants.

Winterizing

Keeping fish over the winter is not a problem. The trick is to keep some portion of the water open all year round. This can be done by running a pump or stock tank heater. This past year I ran a pump in my KOI pond that was just below the surface and bubbled up to the surface. Don't place the pump at the bottom of the pond because you will be circulating cold water from the surface with warm water from the bottom and the overall pond water will be colder. Try to stabilize the temperature at the bottom of the pond because that is where the fish will stay through the winter months. In my water garden pond I ran my waterfall and disconnected my filter so it wouldn't freeze.

Salt

In my KOI pond, I remove all my plants and add about 40 Ibs. of salt in late fall. The salt must be non-ionized - I use solar salt. The salt helps protect your fish during the winter months. Just a note, while working at Ocean Journey I saw them adding salt to the freshwater fish tanks and I asked them about the salt and they also said that it protects the fish from disease.

Water Quality

Water quality is more essential for raising KOI than goldfish. Goldfish seem to be more tolerant of their water environment than KOI. In the summer, I mix the KOI and water garden pond water and, in the winter, the two bodies of water are separate.

When adding new fish to your pond, float the bag of fish in the pond for 30 minutes so the water in the bag is the same temperature as the pond. For new Koi, it is recommended that they are placed in a holding tank for at least two weeks before they are released into your pond. This quarantine period is to ensure your fish are healthy before they are released into the main pond.

Keep the holding pond clean with a pump and filter, and all items used in the holding pond should not be used in the main pond to prevent contamination. If you have only one net, dip the net into a solution of Clorox and water when you exchange it between ponds.

When you add water to your pond, add some dechlorinator. For KOI I like a product called Stress Coat® from Pond Care® that removes the chlorine and replaces the natural slime coating of the fish.

FISH

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