



## NEWS LETTER - December 2006

### Heating Your Pond In Winter

As I write this article we are experiencing a cold wave that is moving across the country.

Obviously, more people are adding heat to their pond or water garden than in previous years. There are some important points one needs to know when heating their pond. Some things to consider are;

1. Ambient air temperature and how warm you want to keep the water.
2. How to protect your pond or water garden from heat loss.
3. How much you can afford to spend on the heater and the monthly operational costs.

I see one internet advertizer selling pond heaters and offering this formula; "1 watt per 1 gallon will raise your water temperature 10 degrees in 24 hours!"

I'm only guessing, but this company must have a few unhappy customers if they follow this formula. I can guarantee that this formula has absolutely no value what so ever, except, maybe in the test laboratory of the heater manufacturer. It is not a real world truth and must assume ZERO heat loss during that 24 hour period.

### Lets Start At The Beginning

Water is an excellent conductor of heat. That means water can absorb and dissipate heat quickly. In an environment that is warmer than the water it will take on the heat of the environment. Conversely, in a colder

environment the water will give away it's heat quickly. A pond that is in the ground will loose heat much more slowly than a pond that is above ground and does not have the insulating protection of the earth around it. A pond that is covered and protected from the wind will loose much less heat, which means it will stay warmer than a pond that is not covered. The faster your pond losses heat the more energy it will take to maintain a given temperature.

### How Warm Do You Want It?

Attempting to keep your pond at 70 or 75 degrees throughout the winter is not necessary and in all reality not even a good idea. Koi and goldfish need a "winter". A couple of months with low temperatures to complete the natural life cycle. The key is that this winter is only about 52 to 55 degrees not 33 and only for a month or two not 5 or 6. In our business we have most of our heated ponds and tanks set to maintain 55 to 58 degrees most of the winter. Our largest heated pond for our most important fish stays about 72 degrees with the exception of January and part of February when we gradually turn the heat down to the mid fifties. Then in February we slowly raise it back to the 72 degree mark.

In the normal backyard hobbyist's pond the goal is a little different. Most people just want enough heat to keep the fish from dying under the ice. Most of us cannot afford to spend \$300 or more on a heater and then another \$200 to \$300 per month for the energy bill. So what is the answer?

Well, there are a few things you can do to minimize the

cost and maximize the temperature of your pond.

### **In ground ponds**

Take advantage of the natural heat and insulating power of the earth. Just cover the pond to protect it from the wind and prevent as much heat loss as possible. The cover should be clear plastic to allow the sunlight to add heat during the day which will cut down your heating bill considerably. Add aeration from an air pump located OUTSIDE of the covered pond. This will provide much needed oxygen and force the toxic methane and hydrogen sulphide gasses out of the water and the air space above the pond provided by the cover. This is known as "Positive Ventilation". **Never place plastic or any other cover directly on top of the water.** See last month's newsletter article on covering your pond.

### **Above Ground Ponds**

A pond that is above ground will lose heat from ALL sides, not just the surface. Therefore, all sides must be protected from heat loss. You may be successful by constructing a cover that fits over the entire pond, protecting the sides as well as the surface from wind and providing an insulating air space around the pond. Another method would be to use insulation around the sides of the pond and then cover with clear plastic. Foam sheet insulation in varying thickness and 4 foot by 8 foot sheets may be used. Cut to fit the sides and ends of the pond and duct tape together. Then cover with the clear plastic over the pond and sides. These foam insulation sheets may be found at Home Depot and most other home improvement stores.

### **Temperature**

Heat equals energy and energy costs money. For obvious reasons we want to lose as little as possible of each. For ponds that are outside I suggest that you keep the temperature between 50 and 55 degrees. Attempting to maintain a higher temperature will surely be expensive. For each degree increase the cost of producing that one degree will go up exponentially.

### **Heaters VS De-Icers**

There is a difference between heaters and de-icers. Most de-icers have a narrow operating range. Usually these units come on at about 35 to 38 degrees and shut off at somewhere around 40 to 42 degrees. This does

not mean that they will keep your pond at those temperatures, however. These are small units and are only "aware" of the water temperature directly around them. Water at the far end of the pond may still be only barely above freezing. Basically these units will only keep a hole in the ice immediately around the unit and not heat the pond at all.

Heaters, on the other hand, have a wide operating range. Usually they operate between 50 and 90 degrees. The temperature is adjustable by setting the desired temperature on the thermostat controller. The thermostat sensor can be placed away from the heater so that the water has an even and consistent temperature throughout the pond.

Submersible heaters have the added value of being able to be moved to quarantine tanks when not being used to heat your pond. All koi and goldfish should be quarantined at 74 to 76 degrees. A submersible heater may be used all year.

### **Happy Holidays**

The staff of Blue Iris Water Gardens wishes all of our customers and friends a very happy holiday season. **MERRY CHRISTMAS to all!**