

*How To Build A Beautiful Backyard Pond*

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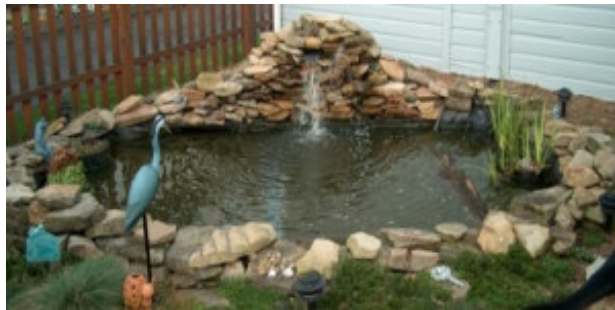


Robert A. Dorrance Sr.

*How To*

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## How To Build A Beautiful Backyard Pond And Have Fun Doing It



by Robert A. Dorrance Sr.  
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## Forward:

I must tell you, building a pond is a great experience that you will love for years and years, and since it is a creative endeavor, you really can put your own signature on it. This e-book will give you the steps to take as you plan, and many pointers along the way. Use your imagination and try different things to make it just the way you want it and you'll end up with a project you'll be proud of and a wonderful pond to boot!

For the first three years of it's existence, my wife and I changed and redid areas around the pond many times trying for that certain final "LOOK". Once you're there, you'll find you're probably not, and that is one of the joys of the pond experience. It's sort of like a work of art that is never quite finished.

If you're a nature lover, and you most likely are if you're considering a pond, then this is where what I call the "pond bonus" comes in. Water plants in the pond itself, perennials and annual flowers around the perimeter, butterflies, Hummingbirds, frogs, and spring peepers make the whole pond area a nature wonderland!

On a personal note, since this is my initial venture into writing, I would ask you to bear with me. I'll try my best to keep instructions and suggestions practical and leave out a lot of side comments and quips that won't add anything to your pond building experience. I'll tell you the way I've done it, the things that have worked and those that haven't and hopefully by the end of this e-book you will find, as I did, that overall it was more fun than work.

Finally, I hope you enjoy the book, and that when your project is finished, you'll send me some pictures and comments on your experience. If we're able to gain enough interest and receive enough feedback, then I would hope in the future I'll be able to put out a second edition of "How to Build a Beautiful Backyard Pond" featuring pictures and stories of your experiences.

Thank You, and ENJOY!

Bob Dorrance

## A SHORT INTRODUCTION:

A little planning now will make things easier once the construction starts. I'll give you some pointers about the different aspects of pond building that have worked for me. I've done a great deal of the "trial and error" stuff and hopefully, sharing my experiences in this regard will save you some time and effort.

There are a number of sites on the internet that will tell you about all the things you "need" to do this or that during the project, but if there is one thing I'm big on, it's "keeping it simple".

Naturally, building a pond from scratch requires a good deal of physical work, particularly the digging part. My son and I managed that part of the job with shovels and sweat, and as you can see in some of the pictures, we moved quite a bit of dirt. Our part of the country is mostly clay so we managed to burn a few extra calories. If you are physically unable to do this kind of work, then maybe hiring a friend or neighbor or strong relative will be the answer. That way too, you can sit in your lawn chair, supervise the dig, and bring refreshments when needed.

It might be best to read this entire book before you begin because hearing about the experiences of others will tend to get your imagination going and get you thinking about what touches and features you might like to incorporate into your own pond. In other words, it will help you develop your game plan.

And, finally, if you run into any problems during the job, you can log onto my [Website](#), look through the articles there, or [email](#) me and I will be happy to answer any questions. Bob



## CHAPTER 1:

### PRE-DIG CONSIDERATIONS

Logically, the first question you should ask is WHERE? Do you have a huge yard with a lot of trees and shrubs and flowerbeds? In other words what is the present landscape like? Would you prefer your pond in a sunny spot or in the shade? That may not seem too important, but if you should decide to surround your pond with flowers, it becomes very important. It seems (to me at least) that there are many more varieties of flowers that are sun lovers rather than ones that prefer shade. Another consideration also is that if you place your pond too near to trees, then falling leaves become a cleanup problem.

Once you've decided on a location, then the next question is HOW BIG? Do you want a small pond that will only need a few hundred gallons to fill, or something more like what you see in the pictures that accompany this text that holds around three thousand gallons? Do you have a water spigot close enough to your pond location so that you don't need three hundred feet of hose to fill it?

If you are going to have a pond with a pump and filter to re-circulate the water, then you will need an electrical source nearby. (More about electrical work later). Are you thinking of having a water fall or fountain? Do you think that you are going to want fish or other aquatic life in your pond?

Will you need a fence? Does your city or township require fences or any other kind of safeguards around ponds? If there are no local ordinances in this regard, then how about your own personal feelings about keeping such an area safe for small children, who all seem to love water and gravitate to it like bees to honey?

Where is the one really good spot in your yard where you love to sit and commune with nature? If you have a spot like that, then that is probably the perfect place for your pond. Just sitting and watching a waterfall or fountain is very relaxing, and if you've decided to liven up your private little lake, then choose fish like Koi, Comets, and Shabunkins which seem to be quite hardy specimens. They winter well, even here in northern Ohio. We haven't lost one fish to the weather in the eight years we've had our pond.

Now, as to the basic "hardware" needs. Set your mind to having a strong liner, even if it's more expensive. This is the key to a trouble free pond. Firestone makes a liner material called EPDM

PondGuard that is tough and very puncture resistant. (Holes in the liner are a real pain in the neck!). Besides the liner, you'll need a submersible water pump, a pond filter, a UV light (sometimes called a UV filter), and a few pond plants. I'll go over these items in more detail shortly.



## CHAPTER 2:

### POND CONSTRUCTION

By now the location of your little lake should be decided. You've picked a good spot in your yard where you can see the pond from different places, and it's near enough to the house so you can see it from a window. This is really part of the fun because you can visualize the landscaping ideas you'll be incorporating into the pond area once the dig is finished.

The first thing to do is outline the perimeter of your pond. Avoid square or sharp corners because your pond liner will conform much better to a freeform round or kidney shape. You should also have made the decision by this time about the size of the design. I would strongly suggest not going too small. I changed the size of our pond two times because the first and second time just weren't big enough. Lay out the final design and size on the ground where you plan to dig with a can of spray paint.

The next thing to decide is the depth of the pond. I would suggest at least twenty four to thirty six inches. Our pond is thirty six to forty eight inches deep and the main reason is the fact that we have fish. Some of our fish are quite large, we have two Koi's that are about eighteen inches long and they definitely need the room. If you're going to have fish, or think you might get fish in the future, then don't skimp on pond depth. If you live in a cold winter climate like we do, then the fish need room at the bottom to winter over. Like I mentioned previously, we haven't lost a fish to the winter in the eight years we've had our pond.



Keep in mind that you want to keep the top 'shoreline' edges pretty level. The reason for this is that once you put the liner in and fill the pond with water you won't have a large piece of the liner showing

on the high side of the hole. Also as you dig, remember that you are going to want a ledge most of the way around the perimeter of the hole, about six to twelve inches down from the top and about twelve inches wide. This will provide you with a “shelf” to set your pond plants on. More about pond plants later, because they are very important.

Once the hole is dug and shaped to your satisfaction and with any protruding sharp rocks removed to provide a relatively smooth surface for the liner to rest on, then you are ready to install the liner. Here are the quick calculations to figure the size of your liner:

**Length: Length of the dug out area plus two feet plus the depth plus three feet.**

**Width: Width of the dug out area plus two feet plus the depth plus three feet.**

**For Example:** The hole is ten feet long by six feet wide and the depth is three feet. Therefore, the liner LENGTH is  $10 + 2 + 3 + 3 = 18$  feet. And the WIDTH is  $6 + 2 + 3 + 3 = 14$  feet. So the needed liner size is 18 feet long and 14 feet wide.

Some people have lined the dug hole with old carpet scraps to provide a little extra cushion under the liner and also a little more protection in case a sharp rock may have escaped detection. Personally, I didn't do this and we haven't had any leakage problems.

So, now it's time to install the liner. Make it easier and get some help for this operation. Position the liner over the hole, trying to keep an even overlap on all four sides. Next push the liner down into the hole as evenly as you can, keeping in mind that you want the overlap to be as equal as possible all the way around the hole. When you are satisfied that the liner is positioned correctly, place a few heavy rocks on the overlap equally spaced around the pond.



Now it's time to start filling the pond. Obviously, the smaller the pond, the quicker the fill. A pond the size of ours took quite a while, and while it was filling we used the time to disperse the liner evenly so that you don't get a lot of large folds. You're bound to get some folds but if you work on smoothing them out as the water is going in the end result will be a nicer appearance. If you have to make any moves to even out the overlap, do it before too much water is added because it gets heavy fairly quickly and once the weight of the water takes over you won't be moving anything. As the pond fills and the liner conforms to the shape of the hole and you see that your overlap around the edges is looking pretty good, then you can start to relax because the hard part is done. Easy sailing? That's next!



After the pond is filled, cut off the excess liner you have around the perimeter, leaving yourself a foot or so around the whole edge of the pond. (NOTE) If you intend to have a waterfall, you should add the area that it will take to **LINE THE WATERFALL** to the dimensions of your pond liner and cut the additional area as a part of the liner. The idea here is to keep **ALL** the liner in one piece. If you have to use an extra piece of liner for the waterfall, then make sure it is positioned properly so that all the water pumped to the top of the waterfall flows back into the pond.

Just a few words about waterfalls. The sound of splashing water is comforting, and if you do decide to put a waterfall in, you won't want to be without it. For our waterfall I made a fairly large mound of dirt behind the pond, approximately in the center. I purchased a large tub with a spout in it (available at Lowes or Home Depot, etc.) and placed it on a leveled area in the aforementioned dirt pile, with the spout toward the pond and angled slightly down. As the water fills the tub it runs out of the spout and into the pond. As you can see in the picture, you can't see this tub reservoir because I have placed rocks around and on top of it to make it look natural. With

the water running over the stones it really does look like a natural waterfall.



Once the pond is filled, then it's time to let your landscaping desires take over. This is where the creative part comes in. I chose natural sandstone rocks for our pond, but that was what I liked. The only thing controlling your artistic instincts now is your imagination.



Next we'll get into pond necessities.

## CHAPTER 3:

### Maximum Pond / Minimum Problems

Digging the hole and installing the liner was by far the hardest part of this job. Now I'd like to discuss what you'd need to get the maximum benefits from your labors.

You will find that there are all sorts of decorative type accessories available for ponds, but what I'm going to list here are the "must have", items that are absolutely necessary for your pond to reach it's full potential. Later on in the book I'll give a little more detail on each of the following "hardware" items and where you can get them.

1. A good pond liner. First and foremost is the liner that you just installed. I can't emphasize enough the importance of a top quality liner. Nothing will remove the joy of a pond quicker than leaks! It's worth whatever you have to spend, and the material I ended up with is a product called EPDM rubber that is made by Firestone. It is plant and fish safe, and tough as nails. It has a twenty-year guarantee against UV breakdown; in other words it won't deteriorate in direct sunlight. I know this to be a fact personally because this same material is used to cover flat roofs and my parents had a flat patio roof covered with it about twelve years ago and it's still in great shape. Bottom line: Don't cut corners with the liner!

2. A water pump. The pump is essential to keep the water moving in your pond. You need a water pump for a couple of different reasons. First you need to move the water through your filtration system. This is vital, especially in a fishpond. Second, if you're going to have a waterfall or fountain, the pump provides the power to make these two special effects work. It's not at all uncommon to have more than one pump in a pond, each one doing a specific job. You may want a smaller size pump to keep the water moving through your filter, and a larger one if you're running a fountain or waterfall. The size of your pump, (or pumps), will be determined by several things: The volume of water in your pond, whether or not you have fish, and how high you need to lift the water if you're running a waterfall or fountain. For a pond of say, 3000 gallons, a pump that will move 1200 gallons an hour would be great.

3. A water filter. A water filter helps to clean the pond. You'll notice I said "helps" because that is only one of the factors in

maintaining a clean pond. The main function of the filter is to trap the larger debris in the pond such as fish feces, plant leaves, and clumps of algae, sometimes called string algae. I developed a homemade pond filter for our 3000-gallon pond a couple of years ago that does a fantastic job of cleaning out the big stuff. I have some pictures on my [Website](#) that will give you a good idea of the “before and after” effects of this filter. You will find that there are quite a number of pond filters on the market today, some of them good and some not so good. From my experience, I really don’t think you will need one of the super duper gigantic bio-filters.

4. A ultra-violet light. A UV light, as they are usually called, is the second part of the solution for a clean pond. And you would find without one, your pond water would resemble pea soup, green and thick. The way the simple system works is this: The water pump pumps the water through the UV light. As the water passes over the light, it kills the algae, and then as the algae die they clump together, and then the filter collects the dead algae. With the pump, the UV light, and the filter all working together, the result will be nice clear water.

5. Pond Plants. Pond plants bring several benefits to your pond. Besides the obvious fact that they add to the overall beauty, they also help to oxygenate the water. This provides more oxygen in the water for your fish, if you have any, and also helps to control the growth of algae. Plants such as Water Hyacinths provide shade to help keep the water temperature down on hot days and also make good little natural platforms for the frogs and toads to sit on.

That briefly covers the main five items for success. Naturally you are going to add your own accessories and decorative effects in order to put your individual touch on your pond, but the items I just listed are absolute necessities.

In the next section, we’ll go over how to hook everything up properly.

## CHAPTER 4:

### HOOKING EVERYTHING UP

REMEMBER THIS: WATER AND ELECTRICITY DO NOT MIX, SO SAFETY IS THE ORDER OF THE DAY. If you are the least bit uncomfortable working with electrical wiring and devices, then I strongly recommend hiring a qualified electrician.

Just one quick story in that regard. Not long after we had our pond up and running my wife decided she was going to put those little twinkle lights around the perimeter. I didn't feel that was a very good idea and said so, but of course I didn't know what I was talking about, so the twinkle lights went into place. One night she discovered they weren't on so she walked out to the pond to find out why, in her bare feet no less. Her guardian angel was with her that night because as she was checking the lights, part of the string went into the water. Natural reaction. She grabbed them and got the shock of her life. Under those conditions she might have been killed, but most fortunately she is still with me. The only thing killed that night was the idea of twinkle lights around the pond.

Submersible pumps and submersible lights are specially constructed to be used under water. As far as above ground lighting around the pond goes, the Malibu type lights that run off a twelve volt transformer work very well. Remember that everything that will be hooked up to electricity must go through a GFCI (Ground Fault Circuit Interrupter) outlet or breaker. No exceptions. Below are images of the different components. From left to right are a water pump, a UV light, and my own homemade pond filter. Of course all of these components come in different variations.



For ease of information I'm going to tell you how I set up the equipment in our pond, and why I did it the way I did. First the

Water Filter. The filter is my own design and has proven to be the most efficient one that I ever used. It is a submersible type that sits on the bottom of the pond and connects to a piece of 3/4" flexible tubing that runs from the filter to the intake side of your UV Light. Then another piece of 3/4 flex tubing runs from the output side of the UV Light to the intake nozzle of your water pump. Finally, the output side of your water pump either allows the output to flow back into the pond, or if you have a waterfall or fountain, you can attach one more piece of 3/4 flex tubing to the pumps outlet nozzle and use that to supply the waterfall or fountain. Obviously, the water pump is the workhorse of this whole operation since it draws water from the pond, through the filter, through the UV Light, and then through the pump itself. So as you can see, the larger the pump, the faster the flow.

This is a pretty straightforward hookup. You may find it a bit different depending on your choice of water filter. Some filters are designed to be used outside the pond, and I used one of those when we first put our pond in. It gave us a lot of trouble, but it turned out to be a blessing in disguise because it got me thinking that I could make a better filter. So I did, and we've been using it for the past 6 years, with no trouble I might add.

UV Lights also come in submersible and above ground designs. I would recommend the submersible type again, mainly because that's the type we have always used, and other than a couple of bulb replacements, it has never been any trouble.

A note on connecting tubing. It is 3/4 flexible as stated previously, and it comes in clear or black. Your tubing will be cut to different lengths as you use it and I'll provide some examples here. You should cut the first piece (from the water filter to the UV Light) long enough so that you will be able to pull the water filter up out of the pond for cleaning without disturbing the location of the UV Light. This length will depend somewhat on the depth of your pond and where on the edge of the pond you can set the filter down for cleaning. Of course the tubing from the UV Light to the pump only needs to be a foot or two because once those two items are positioned there will be little need to move them. The length of the last piece of tube depends on whether or not you have a waterfall or fountain. If you don't, you won't need any at all. If you're feeding a waterfall, then run whatever length you need from the outlet side of the pump to wherever you begin to feed the waterfall.

It's best to purchase water pump, water filter, and UV Light before you buy any tubing so you're sure what size fittings come with

them. Most of the fittings that come with these items are the  $\frac{3}{4}$ " barbed type and they make for a good tight connection. For example, my homemade pond filter comes ready-to-use out of the box with the proper fitting attached.

In the next chapter we'll take a look at the perimeter of your pond.



## CHAPTER 5:

### LIFE ON THE EDGES

Here's where your creative instincts kick in. This is where you make your pond your own. Basically, it's landscaping, but with a pond it can really become an artistic endeavor.

Sandstone, bricks, slate, field stone, crushed bricks, stream pebbles, mulch, you name it. Let your imagination be your guide. And that's just the beginning. Once you get a base down then you can start thinking about how you want to work in flowers, and plants. You can integrate annual flowerbeds with perennial beds. That way you can add something different each year for variety and still have the "permanence" of the flowers that come up year after year. In the perennial beds for example you could plant some early spring blooms like daffodils, and then in the same bed plant mid summer and fall bloomers to keep the color going. Of course there are so many different varieties of annual flowers that you'll never run out of ideas for your annual beds.

Maybe you like the little ceramic figures that can be set in among the plants. The garden centers have loads of that kind of stuff. You can even get a ceramic toad or two if you like, but I'll guarantee you that you will have plenty of real toads around your pond. Below is just an example of one of the ways to do it.



As for lights, the garden centers and places like Lowes and Home Depot have great selections of yard lights. You're sure to find something just right for you. The new solar powered lamps are especially nice for use around water because there is no wiring

needed at all. Next, a few ideas about what's happening IN the pond.

## CHAPTER 6:

### LIFE ON THE INSIDE

This part is still somewhat about the cosmetics, but there's some more important stuff involved than just looks once you get inside the pond. In other words, we're getting more into the workings of this little eco system.

In chapter 2, when we were discussing pond construction, we talked about the "ledge most of the way around the perimeter of the hole, about six to twelve inches down from the top and about twelve inches wide". This is the plant shelf. All of the pond plants live IN the water, either on the bottom, floating on the surface, or on top of the submerged "shelf".



Types of plants that live on the bottom of the pond are **Anacharis**, an underwater grass, **Camomba**, an underwater weed (but pretty), and **Hornwort**. They are all oxygenating plants and the Hornwort provides the extra benefit of being toxic to algae. Water lilies are oxygenating plants but more outstanding because although rooted on the pond bottom, the lily pad and blossom float on top of the water. Other top floaters are **Water Hyacinth**, **Parrot's Feather**, and **Water Lettuce**. These plants will grow quickly and give your pond some needed shade.

Some of the plants that will do well on your pond “shelf” are **Marsh Marigolds**, **Cattails**, and **Iris**s. The Marsh Marigold has a yellow flower and will bloom from sometime in April into June. The plant grows wild in swampy areas and only survives in soil that is constantly wet, so in pots sitting on your shelf, it is an excellent choice. Cattails are one of the most familiar plants found in swampy areas. They are very pretty but they also can get pretty tall. There are many different Iris plants, some specifically called pond iris, but many kinds of iris will grow in the water. Check with your garden center. You’ll find that having these plants around your “shelf” will give the added bonus of attracting hummingbirds, dragonflies, and butterflies.

All of the pond plants absorb carbon dioxide and minerals, which helps to stave off algae. Without the plants it would be very difficult to keep your pond water clear, even with a UV Light. I would recommend that the plants be allowed to grow and spread out until about half of the pond surface is covered. You will find that they grow very quickly, and before long you’ll be supplying some of your pond owner friends.

The great thing about many of these plants is that if you live in a cold winter climate as we do, you can just sink the plants to the bottom of the pond in the fall, and then in the spring pull them up again and you’re good to go for another season.



## CHAPTER 7:

### SOMETHING FISHY HERE



Let's talk fish for a bit. If you want a truly lively pond, fish are the way to go. Start with a few and soon you'll have a school! Well, maybe not that many, but they do multiply. In our pond we have Koi, Comets, and Shabunkins.

Of these, the Koi are the largest and definitely the fastest growing. In fact sometimes you may wonder if they're going to stop growing. We bought our first Koi about seven years ago. It was about three inches long then, and now it is almost two feet! The Koi's change color as they mature. When we bought our first one it was as orange as a gold fish, but now it is solid white. He is obviously the "big kid on the block" and we call him Hoover because he sucks up the fish food like a vacuum cleaner.

The Comets are bright orange and seem to be the best multipliers. The young are black but gradually change over to orange. None of ours seem to get very large but I have seen bigger ones in other ponds.

The Shabunkins are very colorful, chunky little fish. They are orange, red, blue and black. They grow slowly and never get very large but they sure add a lot of color to the pond.

Our fish population as a group seems to be very sociable and we have never seen any disputes. They all get the same food, which is made by Tetra, and we swear that it helps enhance their color. You

don't start feeding the fish until the water temperature gets up to 50 degrees F in the spring. There are some excellent articles on the Web about the proper feeding of pond fish.

When winter comes and the temperatures start to drop, the fish head for the bottom of the pond and basically go into a state of hibernation. They may appear to be dead, but they're not, and they will survive the winter very well. This is the main reason to dig the pond deep enough, so they're protected from not only the weather, but also from predators such as the Blue Heron.

I honestly can't tell you about fish diseases. Since we dug our first pond about eight years ago, we've only lost two Comets, so we feel that disease hasn't been a real problem for us. Again, I'm sure that if this is a subject you want to research, the Web would be the place to check.



The last picture above is our turtle that we have had for about six years. He was the size of a silver dollar when we got him and when we put him in the pond our big Koi swallowed him almost immediately. Evidently he turned out not to be the Koi's favorite snack because the fish spit him back out and he's been around ever since. He goes to the bottom and stays with the fish in the winter and shows up again each spring.

The one last thing I would recommend is that if you decide to get fish, get them new rather than from a friend's pond. This lessens the risk of health problems. If you want to get a good book about fish and how to raise and care for them, check out [FantasticFishPonds](#).

Next I'll give you the extra details I promised about the hardware items we've mentioned and where to get them.



## CHAPTER 8:

### Firestone Pondguard 45-mil Rubber EPDM Pond Liner

This is a closer look at EPDM pond liner. First you may wonder what the '45-mil' means. If you take 15 or 16 sheets of notebook paper and stack them together it will give you a pretty good approximation of the thickness of this liner. Now you can see why a piece big enough to line a pond is going to be pretty heavy and why I suggested in an earlier chapter that it was really a two-man job to install. Besides being thick, it's tough and very hard to puncture. This is the first place in your pond project to use quality material.



The liner is black, which is the ideal background color for the pond bottom. If you used a light color liner, then items on the bottom, such as pumps, filters, plant pots, etc. will stand out like the proverbial sore thumb. This liner has outstanding resistance to ultra violet radiation and remains flexible year round. Both the Environmental Protection Agency and the American Society for Testing and Material have tested it and it meets their requirements in regard to the safety of fish and aquatic plants. The material is maintenance free and carries a twenty-year warranty from the manufacturer.

Granted, this material is not as cheap as plastic, but the liner is definitely one place you don't want to cut corners.

The following two pictures show the pond liner as the pond is being filled.



## CHAPTER 9:

### POND PUMPS

People make recommendations based on personal experience. So, I would like to recommend “Mag Pumps” made by Pondmaster. These are magnetically driven pumps, contain few parts, and consume less electricity than some other types. Consequently, fewer problems.

They should paint these pumps pink, because they just keep going, and going, and going.....!. Of course I can't make the claim that they “never break”, but we've had ours for eight years and it's still going and.....etc., etc. Really amazing!

Naturally, there are different size pumps for different size ponds. The larger your pond, the larger the pump you will need. For our 3000-gallon pond, we have a pump rated at 1200 gallons an hour. Once you know how many gallons of water your pond holds, then you can get your pump. The quick formula for figuring your pond volume is LENGTH X WIDTH X DEPTH X 7.5.



As you can see in the pictures above, the pumps have two openings. One side is the intake, the other side, the output. Hook your tubing up as described earlier, and if you have any problems please [email](#) me.

If your pond is fairly large you may want two pumps, especially if you have a waterfall or fountain. If you are interested in getting the full scoop on pumps I would recommend you log on to Google and type in: [selecting a pond pump](#). There is an article there by bestfish.com that will give you all the information you'll ever need when buying a pump.

## CHAPTER 10:

### UV FILTERS

UV filters, or UV lights, whichever you prefer to call them, are a necessity for a clean pond. Used in conjunction with a pump and water filter, the UV lights main duty is to destroy the algae in your pond. The dead algae are then collected by the pond water filter and are easily rinsed out of the pond filter media by means of a garden hose. Consequently no green scum floating on top of your pond.

As with most pond accessories there are a multitude of makes and models. Some are submersible and some are not. I like the submersible type because they're down in the pond out of sight. Some of the different makes are Tetra, Aqua, Elektra, and Zap. They are all rated by pond size.



The one on the right is made by Tetra, and is an external type, and the other is an Aqua submersible. In the pictures you can see the extensions where the plastic tubing gets attached; one side the intake, the other side the output I just hooked up one of these Tetra filters for a local customer the other day. Very easy!

## CHAPTER 11:

### POND WATER FILTERS

The pond filter is a key ingredient to a clean and healthy pond. It is a little bio system that traps and processes pond debris. Your filter should have sufficient surface area to support a bacterial population large enough to neutralize nitrogenous waste. Basically that just means that you need enough area in your filter to have plenty of “good” bacteria to take care of the waste from the fish.

So, the main requirement of a basic pond filter is area. The more available area, the better it will work

There are a lot of pond filters on the market. I offer one that I make myself (and have been using for years), but I must be fair and give you some information first on what else is available.



The pictures above show three different types of pond filters. The one on the left is an Aquabeed Pond Filter. It is a very elaborate filter with many “bells and whistles” as Aquabeed says in their literature, and I am sure it does everything they say it will do. This would appear to me to be a top of the line filter. These units come in several sizes and range in price from \$1150 to \$3000.

The filter shown in the middle photo is a submersible from Pondmaster, and is rated for ponds up to 1000 gallons for \$35 and a similar but larger model that will handle a 2000-gallon pond for \$58.

The filter on the right is a non-submersible pressurized type. These sit somewhere outside of the pond and unless you want the filter to show, will need to be camouflaged in some way. There are many different sizes of these filters also and this one is rated for ponds up to 2000 gallons and sells for \$180.

When my wife and I built our first pond we invested in an external, non-pressurized type filter, and as it turned out, it didn't work for us. We had some problems with it and I decided to try my hand at filter building. Knowing that surface area is a big factor in pond filters, I came up with my own homemade pond filter. I have a picture of it here and I'll tell you what it does.



This is the kind of filter that we have been using for the last seven years and it works very well in our 3000-gallon pond. The pictures below will give you some idea of how it helps to keep the pond clean. The picture on the left shows a filter with a newly installed media ready to go into the pond. The picture on the right shows the same filter one day later. As you can see it collected a lot of junk. And even though the right picture appears to be really dirty, this filter can, and probably should, be left in the pond, at least for a few more days. I'll try to explain why.



The filters I offer for sale are big on "working area." You know, the area I was talking about back in the first paragraph, in conjunction with the "good" bacteria. I offer two different size rolls of filter media. One has a "working surface area" of 16 square feet and the other has a "working surface area" of 24 square feet. That is why they work so well. This is a pond filter that you actually don't want to over clean because if you do you'll be washing away the good

stuff along with the bad. “Cleaning” amounts to taking the media out of the filter chamber and washing it off with a garden hose. It doesn’t get much easier than this.

This unit comes ready to use out of the box. If the media chamber or any other parts break, I’ll replace it free for up to two years. This guarantee will come to you in writing with the filter. I have spelled this guarantee out on my [Website](#). You’ll save a lot of money and it works great.

Just remember, what ever filter you end up buying, be sure to empty them out and put them away for the winter months so they don’t freeze.

## CHAPTER 12:

### RANDOM THOUGHTS

This is just some general information that might be useful once your pond is completed. Really no particular order, just off the top of my head.

If you have fish in your pond, you shouldn't feed them once the water temperature falls below 50 degrees and you're heading toward winter. At the other end of the seasonal spectrum, in the spring, don't feed them until the water temperature reaches 50 degrees. You can see here that a thermometer might be a good accessory.

In the winter, again if you have fish, and your pond begins to freeze. Make some kind of small hole in the ice to allow any gases to escape. We found that the best way to do this is to pour some boiling water just long enough to make a small hole in the ice. Whatever you do, don't pound on the ice because you will stress the fish. The best way to avoid the problem is to keep a bubbler or an air stone going to move the water.

Another thing about fish. Fish food is kind of expensive and we found that fish like, believe it or not, Cheerios. Buy a big box of off brand Cheerios and mix it in with their regular fish food. They love the stuff! We also found out that they love frozen peas.

If you ever get a turtle for your pond, get him a piece of driftwood to float around on. They like to get up on something and sun themselves.

About the only predators we have to worry about are the Blue Herons. I don't know how they find ponds in residential neighborhoods, but they do. We've had one show up two or three times. But each time we were fortunate enough to witness the arrival and were able to scare them off. However we have heard several stories about people who have had their entire ponds wiped out, every single fish. From time to time my wife has netted the area but that does take away from the beauty of the pond, so the net never stays in place for long. We also bought a fake Heron and set it near the pond. We change its position every once in a while, that way it helps us feel that we might be doing something useful. I guess the best way is to be vigilant when you're home and hopeful when you're not.

Personally, I wouldn't worry too much about cleaning the bottom of the pond. We've never cleaned ours since it was put in. Just make sure your filter is in good working order.

When fall arrives and you have trees nearby, it's a good idea to put some netting over your pond. Decomposing leaves are not good for the fish, so if you do get leaves into the pond, try and skim off as many as possible.

Potted perennials that sit on your pond shelf can be cut back for the winter months and just sunk to the bottom till spring if you don't have anywhere else to keep them.

We have found that the pond does not cause any mosquito problems. As long as you have fish and water movement of some kind you shouldn't have any problems either.

After the pond season is over, it's a good idea to get all of your equipment together, clean it up and store it all together in one place. Believe me, in the spring, you'll be glad you did.

Always be aware of small children near the pool. This should go without saying, but this is a subject that can't be stressed enough.

Ever hear of a Pseudacris Crucifer? I never did either. I have heard them though. Every year they are the little frogs you'll hear on that first warm spring night. I heard them called "spring peepers" so I had to look it up and see if these little creatures had a real name. Turns out they do, so from now on I'm going to call them spring peepers. They're attracted of course to ponds, and they lay a lot of eggs, so it's spring treat time for the fish.

One very nice effect for your pond is a single underwater light that points up through the water. These lights usually come with different colored lenses and they look real pretty at night.

It's very important to be careful when fertilizing your yard to not get any of it in your pond. This could be very bad for your fish.

## **In Closing:**

First of all, I would like to thank you for purchasing this e-book. I hope you found it to be insightful, and hopefully beneficial to you.

As I said, having a pond is a joy to have. Over the years that you have it, you will be able to share your pond experiences with others. I hope you can share some with me.

Please remember that if you ever have any questions at all about your pond, feel free to [email](#) me, I would be very happy to help you.

Good luck to you and your pond adventure, Bob

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