

# Backyard Ponds and Water Features



## Backyard ponds

It's time for you to uncover your dusty old Green Adirondack chair, sit back, put your feet up and relax. Pop the cork on that bottle of Silver Oak Merlot' and overwhelm your senses with the serene calmness and tranquility of a water feature in your own back yard. All gardens can be dramatically enhanced by the addition of a water garden, fountain, pond or waterfall. Your backyard pond or water feature can bring incredible enjoyment and true inner contentment to you, your family, friends and even your neighbors. It can be a naturally relaxing and scenic addition to your home that can provide interest and enjoyment year round. Most backyard ponds are typically small, sometimes no larger than three to four feet in diameter, but can be as large as you have room for one. They can be built in barrels, tubs, patio containers or even those old plastic swimming pools that you once had for the grandchildren. Water is extremely effective in bringing wildlife to your backyard, everything from birds, butterflies, dragon flies, frogs, newts, salamanders, your neighbor's cat and unfortunately even those pesky raccoons.

## Where To Put Your Backyard Pond

Consider locating your backyard pond where you can see it from a deck or patio, bedroom or kitchen. Have it blend in with its natural surroundings. Elevate the soil around the pond slightly so that excess water will flow away from the pond, not into it. Make sure that any drainage from the pond is away from your house and you might even consider using a French drain for any overflow, especially during our coastal winter rains. Plan to landscape around the pond to provide habitat for frogs, insects and birds that need both land and water. If you plan to use a pump to recirculate water, use a filter, or light the area surrounding the your pond, be sure that electrical service is closely available and professionally installed; after all we are talking about electricity and water. There will be less maintenance if your pond is not under trees. Most aquatic plants will grow better in full sun, especially water Lilies. If you do not have space in your yard for a built-in earthen pond, consider a "tub" pond or large water bowls or simple water

feature. Modern garden water fountains come in a vast array of designs, shapes, sizes colors and materials. These can be placed on the patio and provide many of the same benefits as a built-in pond. There are numerous tub kits available that can be as simple as adding water, a pump, and some plants. They can also be moved inside in the winter as long as good lighting is provided for plants, but living on the Central Oregon Coast makes moving it around a non-issue.

## Pond Liners

Pond Liners keep water from seeping into the soil. Even in heavy clay soils, a liner is necessary. You can buy rigid pond liners in a variety of shapes. These are durable and may include built-in waterfalls. Many are quite small. If you want a larger pool or would like to design your own shape, consider using a polyvinyl chloride (PVC) liner. Use a liner specifically designed for ponds. While other plastics initially may be cheaper, many are not resistant to ultraviolet light and will break down quickly. Some plastics may also be toxic to fish. Liners also come in different thick nesses. A thicker liner tends to be more resistant to punctures and will last longer. While expensive and requiring more expertise to install, cement is also an option as a pond liner. We built a cement form and then covered with a liner.

We recommend contacting BTL, Bend Tarp and Liner, Inc.

<http://www.bendtarp.com> They will quickly and easily guide you through all your measurements and will have your liner delivered to your home within a couple of days. To determine how large a piece you will need, determine the maximum width, length, and depth of your pond. Multiply the maximum depth by 3. Then add this number to both the length and width. This will allow enough plastic to be securely held down around all pond edges. You can purchase most pond liners on-line and they will talk you through any doubts that you may have, regarding size and shape.

## Installing Your Pond

You can put in a backyard pond anytime the ground is not frozen or overly wet like it is here on the coast during the winter months. If using a pre-formed liner, dig a hole to the correct depth and slightly wider. Insert the liner, making sure it is level and sits securely in the ground. Backfill around the sides. Add water, pump, and plants. Complete landscaping around the pond, but take your time.

If you use a PVC liner, plan on at least a couple-three weeks to install and landscape the surrounding area. It's taken us nearly four years to landscape and we keep exchanging one plant for another.



## Steps to install a pond with a PVC liner

1. Decide on your pond's location.
2. Using a hose or rope, lay out the shape of your pond on the ground.
3. Once you are happy with the shape, start digging. Stockpile your topsoil so you can use it to landscape around your pond.
4. Plan for part of your pond being at least 18 to 24 inches deep; 24 to 36 inches is even better and Raccoon proof is anything deeper than 18 inches; they can't swim and fish at the same time. Remember, you'll eventually have to get you're your pond to do maintenance, so don't make it too deep. Good pond depth will allow for a greater diversity of plants and fish to live in the pond. You may want to make tiers around the inside of the pond at various depths on which to place pots of different aquatic plants. Make tiers about 12 inches wide to accommodate the pots. This can also serve as a bog which requires specialty plants.
5. Remove any rocks from the excavated area.
6. To help prevent punctures in the plastic, put a one-inch layer of damp sand on the bottom of the excavated area.
7. Spread the plastic liner over the hole. Let it sag gently in the hole. Place a few rocks or bricks around the edge to hold in place.
8. Slowly start filling your pond. The weight of the water will help smooth out the liner. Remove rocks holding the edges to allow liner to conform to the edges of the hole. Smooth out wrinkles but do not pull too tightly. You can walk on the liner if you remove your shoes.
9. Finish off the pond by placing rocks around the edge to securely hold the liner in place.
10. Install pumps and filter, if desired. Many smaller pumps have a built-in filter. For larger ponds, a separate pump and filter may be necessary. Make sure the filter and pump is adequate for the volume of water in your pond. Pumps not only add interest, but are important in adding oxygen to the water. If you want a fountain or waterfall in your pond, you will need a pump to circulate the water. The higher the waterfall and the bigger your pond the larger your pump needs to be.

11. Let the pond sit for a few days before adding fish and plants. This allows chlorine to evaporate from the water. Chemicals are also available that will quickly neutralize chlorine and other harmful compounds.
12. Place plants at various depths in the pond and add fish gradually.
13. Feeder goldfish are a good beginner fish. Gradually move on to more specific types of fish like koi and catfish.

## External Pumps

These pumps are designed for moderate to high-volume pumping for both ponds and waterfalls. We are using and recommend Pond Master pumps. Our external pump has been running non-stop for over four years straight, without a single problem. It runs 24/7, 365 days a year. <http://www.pondmasterstore.com/>



These are heavy duty 115v pumps and are extremely energy efficient, using less power than comparable direct drive and magnetic drive pumps. And they're designed for outdoor operation and do not require special protection other than standard winterization in colder climates.

### **Submersible Pumps** for Waterfalls and Skimmers

These are also highly efficient pumps which have reliable ceramic bearings and deliver up to 3000 GPH, enough to create a dynamic, attractive waterfall or drive a medium to large size pond skimmer.



Pondbiz.com is a great resource for purchases of pumps, filters, UV lights, pond calculator and just about anything else that you might need to get your pond up and running quickly and hassle free.

## Pond Skimmers

Skimmer Filter provides both mechanical and biological filtration all in one unit for ponds up to 5,000 Gallons. The skimmer provides efficient removal of floating debris and oxygen robbing protein film. A leaf basket included in the skimmer offers easy removal of larger debris, followed by mechanical filtration pads and biological filtering chambers. Everything is removable for easy access and maintenance. Skimmer door automatically adjusts to pond water level for more suction. Skimmer often included a spacious area for submersible pump and a drain fitting for easy "spray out" cleaning. The floating skimmer door also prevents most fish from entering skimmer basket.



## Establishing plants

For ponds, consider a mix of emergent, submerging, and floating species. Emergent plants, those that have their roots in the water but their shoots above water, can be added to the margins of pools. These include cattails (*Typha* spp.), arrowhead (*Sagittaria* spp.), and water lilies (*Nymphaea* spp.). Submerging species, or those that remain under water such as elodea, are often used as oxygenates. These are plants that remove carbon dioxide from the water and add oxygen. These plants are essential in most ponds to keep the water clear. Floating species or those that are not anchored at all in the pond include plants such as duckweed (*Lemna minor*), water lettuce (*Pistia stratiotes*), and water hyacinth (*Eichhornia crassipes*). While attractive in bloom, water hyacinth and water lettuce can be serious weed problem outside of the Oregon coast; however, since they are not winter hardy, there is no problem with them spreading in northern climates. While not as effective as oxygenates, these plants help keep the water clear by limiting the amount of sunlight that algae receive. In tiny ponds created in barrels and similar containers, these plants may be adequate to maintain clear water.

## Choosing and establishing plants for ponds

1. Consider the following when selecting plants.
  - a. How deep is the water? This will be a factor in establishing plants and their survival over winter if you live in colder regions. Some species need a minimum depth of 2 to 3 feet to grow well.
  - b. Is your pond permanently installed in the ground or is it a small tub that will be moved inside in the winter? In this case, even tropical plants may be an option.
  - c. Will you drain your pond in the winter? If you intend to drain your pond, you should consider plants that can spend the winter in a basement in a dormant state.
  - d. How much sunlight does your pond receive?
  - e. How large is your pond? If your pond is small, consider dwarf species.
2. Purchase plants from a reliable vendor. Remember to include some oxygenate plants such as elodea.
3. Emergent and submerging plants should be planted into pots. A wide assortment of pots is available, from plastic baskets to pulp planters. Choose pots that are large enough for your plants.
4. If using baskets with numerous perforations, line the basket with burlap or 2 layers of newspaper to keep the soil from falling out of the holes.
5. Fill the container about half full with a mixture of good garden topsoil. Do not use potting mixes or peat moss. These are too light and will float out of the pot. Adding aquatic plant fertilizer to this bottom layer of soil is recommended for some species. Follow directions on the label for amount.
6. Place the plant on top of the soil and fill the container with topsoil within one inch of the top.
7. When planting water lily rhizomes, make a mound of soil in the middle of the pot. Place the rhizome at a 45 degree angle. The crown of the rhizome should be toward the center of the pot. Cover the roots with soil, but not the crown.
8. In all cases, add a layer of gravel to the top of the pot. This will help keep the soil from floating out and prevent fish from digging in the soil.
9. Slowly place the pots in the pool to keep soil from floating out.

10. Place pots on bricks or plastic milk crates to get the desired height.

11. Floating plants can be placed directly into the pond with no other care.

Plants should cover 50 to 70 percent of the water surface. Native plants usually do not need fertilizer. For some exotic water lilies, limited fertilizing once yearly may be required. Check with your nursery on care of plants and how deep to place potted plants. Be aware that over fertilizing may cause unwanted algae blooms which can rob the water of oxygen.

## **Add Fish and Scavengers**

Consider stocking your backyard pond with native fish. They are fun to watch and help keep the pond free of unwanted insects; Mosquito fish also known as Gambusia does the job well. Most small ponds will warm up quickly in the summer, so make sure you stock with fish that can tolerate elevated temperatures; 65-75 degrees, Fahrenheit, here on the coast.

You'll also need scavengers, such as aquatic snails, tadpoles and catfish; Channel Cats or Albino Cats to help control algae and/or to eat dead and decaying materials. They also help to control your fish population.

**Basic Pond Fish** include but are not exclusive to these fish types:

GOLD FISH: Shubunkin, Sarasa Comet, Betterling, American Flag, Fancy, Ryukin, Oranda, Telescope, Panda Oranda, Redcap, Black Moor, Red Oranda, Black, Blue Calico, Chocolate, Fantail.

## **Pond Maintenance**

Algae is a common problem in many newly established ponds. The water often becomes an unsightly green after a few days. While your first instinct is to drain the pond and start over, this only prolongs the problem. Once a pond is "balanced," algae usually are kept at an acceptable level. A balanced pond is one in which the nutrients are at the appropriate level for the plants present. Excess nutrients and light are needed for algae. Reducing the nutrients and decreasing the amount of light entering the water will help reduce algae. Floating plants or those with broad leaves such as water lilies will help reduce the amount of light available for algae and compete for available nutrients. Scavengers such as snails will help clean up wastes from the bottom of the pond. Also very important for pond maintenance is microbial; it restores ecological equilibrium; it eats excessive nitrates and phosphates. Placing a couple of small pieces of ocean driftwood; salt adds beneficial electrolytes which improves your fishes' health and reduces stress. Natural barley, which comes in many forms; mats, pads, pellets, sticks, bagged straw and even liquid extract release carbohydrates that cause algae to clump together and sink. They also provide mechanical and biological filtration.

## Pond Filters

Pond Filters can help reduce algae, but require some maintenance. Filters need to be cleaned frequently if algae are a problem. UV Lights (Ultra Violet Clarifiers) or filtration system is an extremely safe and effective way to remove as much as 99% of your water born algae and can be found in all sizes and shapes from whimsical to hidden. Chemicals can also be used to control algae. Use cautiously as they can be toxic to other plants and aquatic life. The need for algaecides should decrease as plants become established. We use a product called "Green Clean" which easily treats, controls and prevents algae problems on the spot. We also have an upper bio-pond which filters and cleans our lower pond.



**Aqua Frog & Aqua Fish UV Lights**

Excessive plant growth, especially of free-floating plants, may be a problem. Periodically skim off excess growth of duckweed, water lettuce, and other floating plants. Monthly, prune dying plant material. Clean out some of the decaying plant material that has accumulated in the bottom of the pond in the spring. Remember: a natural pond is not a swimming pool and too much cleaning can do more harm than good.

**Animal Decoys and Repellents** are a serious consideration when it comes to keeping some of those pesky unwanted visitors out of your pond. Otherwise you may need to cover your pond with netting or even an automatic sprinkler system.

### **Helpful & Knowledgeable pond building & accessories outfits.**

Drs. Foster & Smith are an on-line company that specializes in ponds, pond equipments, plants, fish, pumps, chemicals, UV lights, pond cleaners, food and filters. <http://www.drsfostersmith.com/product/shop.cfm?c=5163>

Kramer's Garden in McMinnville, Oregon, 1-503-427-7729, ask for Damian.

Waterscapes, Located in the Willamette Valley. We create pondless waterfalls, creeks, ponds and so much more. <http://www.willamettewaterscapes.com/>

Bear Valley Nursery & Landscaping, Lincoln City, Oregon . 541-996-2327, ask for Scott.

Ponds & Beyond, Aquatic & bog plants, water features. Knappa, Oregon.  
<http://pondsandbeyond.biz> 503-458-6707, ask for Lorelie

Pacific Water Gardens 32300 S. Dryland Rd. Molalla, OR 97038. Phone: 503-651-3302 <http://www.pacificwatergardens.net/home/contact-us>

Pond Master Pumps,  
<http://www.pondmasterstore.com/?gclid=CO3Xnou75JcCFRg6awodjBJWCw>

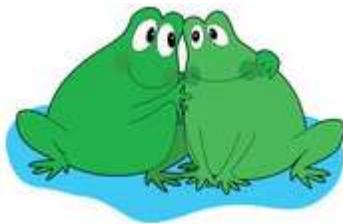
Pond Skimmers, <http://www.azponds.com/Skimmers.htm>

Pond Liners, <http://www.bendtarps.com>

Pond Size/Area Calculator, <http://pondbiz.com/calculator.html>

Pond and Puddle Lawn Designs, <http://puddleandpond.com>

Aqua Mart Inc. <http://www.aqua-mart.com>



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