

Other Accessories

Fountains & Statuary

Bridges, spouting fountains like fleur d'lys, foggers, streams and waterfalls all add interest and envy to your sanctuary in the yard. Garden Art around the water garden will reflect the landscape, attract butterflies and hummingbirds.



Underwater Lighting

Under water lighting can add on a whole new dimension to your pond and extend the enjoyment. Underwater lights can be used to highlight beautiful outlines of plants. Illuminate a waterfall to make it look like fire dancing down. Show off the beautiful spouting statuary piece. Or, just to enjoy watching your prized koi play in the light. For any number of reason adding lights will enhance the night time pleasures after the water lilies have closed and well into the fall after the plants have gone dormant. Lights are just the beginning



Phone: 413-733-7663

E-mail: chapleygardens@comcast.net

www.Chapleygardens.com

Like us on Facebook



WATER GARDENING, A BEGINNERS GUIDE



Table of Contents

- Who we are
- How to find the right sight to place the water garden.
- Sizing the Water Garden.
- Beware of the "Green Monster Worries": An intro to filtration theories and real life practices.
- Water Quality
- Planting the Pond.
- Fish; The choices, the benefits, are they necessary.
- Landscaping around the Water Garden.
- Adding Underwater Lights & other accents.

Who we are

Chapley Gardens is owned and operated by Paul Michael & Stacey Chapley, We are definitely a "Mom & Pop operation". We have been "doing" water gardens and koi ponds for over 30 years. Now our sons can be found helping pond keepers. Our passion is bringing you the highest quality of plants for the landscape and the water garden along with the biggest choice available. Our vast knowledge of water gardening can be seen in the shop and display gardens and we can answer any questions you may have. All our water garden pumps, filters, water treatments, and liners are trialed by us before we sell them to you. So this way we understand the use of the product and you won't be throwing away your money. We are available for lectures & slide show, consultation, troubleshooting, water testing and also help with design.



We carry the largest inventory of aquatic plants, goldfish and koi, proven filters, pumps, and quality liners. Let us help you add that special place in your backyard.

Water Gardening is a natural and a beautiful way to create that little

Oasis in your yard. Once a water garden is installed maintaining it is minimal. Your water garden will require a spring cleaning, usually an afternoon chore. Once the cleaning is completed you should spend no more than 2 hours maintaining it. With this guide we hope to make you aware of your choices and to answer many questions you may have. We are always available for answering your questions, and it is our pleasure to display and show you new plants, products and ideas. We welcome any suggestions you may have and would like to extend an invitation to come and visit our shop and display gardens.

Wet Pets

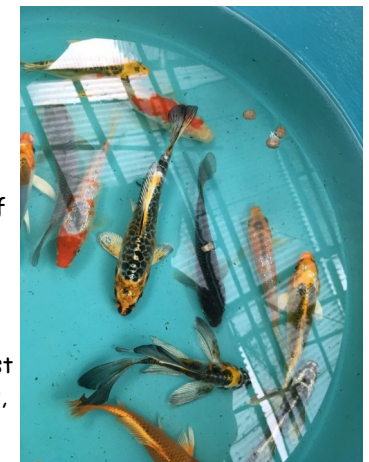
Fish add wonderful movement in the water, they can become our friends, have distinct personalities and be our flowers in a shaded water garden. There are usually two choices, goldfish and koi. Goldfish tend to be inexpensive and come in colors of orange, red and white (known as



Sarassa), and calico (known as Shubukins). They can have short tails or long flowing tails. Normally goldfish will max out at 6-10 inches in length. But if you have a boy and a girl, they will breed in your water garden. Control of the population is a must, to help keep balance and water clarity in the water garden.

The second kind of fish pet for the water garden is Koi. They come in an even larger selection of colors, combinations and fin lengths. They can potentially grow 3 feet in length (not including the tail), but do to our short summer they can grow to 24 inches. Koi require larger ponds and should not be placed in a water garden less than 500 gallons. Koi are bred here in the US, Israel and Japan. Depending on their origin, color, markings, quality and size will determine their price ranging from 8 dollars to 2000 dollars. Large Koi can be destructive to underwater plants and lilies, so if you want to enjoy both, keeping them in separate ponds connected by a stream is a good idea.

You don't need fish to have a water garden but they do help keep the pond clear of unwanted pests. Fish require a pH of 6.8-7.8, and it is best to keep a little salt in the water at a rate of 1 pound per 100 gallons (don't worry it is not going to turn into an ocean). The stocking rate of fish should be 10 inches of fish per 100 gallons, this is standard recommendation for our filters. You must take into consideration the fish will grow, and not to max out your fish capacity in the beginning



Tropical Bog Plants

There are a number of Tropical plants to choose from, for winter care plan on bringing the plants indoors or storing the tuber if you want to keep them. A few choice Tropicals are;

Umbrella Palm (*Cyperus alternifolius*) a tall accent plant with umbrella foliage top. This plant can grow 18 inches to 4 feet. It does well in full sun to full shade.

Papyrus (*Cyperus papyrus*), also known as the Giant Egyptian Paper Reed. A striking plant growing 6-12 feet, it's triangular stocks hold umbels of pendulous leaves. There is also a dwarf variety that will grow 18" called Cyperus haspan.



Canna glauca species are a must with striking green or variegated foliage holding spikes of yellow, red, orange, salmon or pink flower stalks are wonderful.

Taro (*Colocasia species*) also known as 'Elephant Ears' make striking contrasts against one another and the papyrus or cattails. Large leaves come in Green, Black, or Cranberry color are held up by strong stems in green, black or cranberry. They do well in Full Sun to Full Shade.

These are just a few tropical bog plants to look for.

Floaters

Floaters are a Northern Water Gardeners answer to their prayers. Floaters include Water Hyacinths (*Eichornia crassipes*), Water Lettuce (*Pistia stratiotes*) and Frog Bit (*Hydrocharis morsus-ranae*). All help in shading a pond if a natural balance is wanted or they work hard in the Wetland Filter. The only one with flowers is the water hyacinth and they flower when they want to. Their roots provide protection for young fish fry and tadpoles as well as a natural mechanical filter by trapping suspended debris in their root system. Floaters pull nutrients out of the water to starve algae

Finding the right place & size for your pond.

Picking the perfect spot for a water garden is the most important start to planning. Are recommendations are for the northeast.

- Preferably the spot should get 6-8 hours of sunlight, this allows for the widest choice of aquatic plant material.
- The water garden should not be located in an area that may be prone to seasonally high water table or below grade, where surface water can run into it
- Locating the Water Garden off of a patio, deck, gazebo or a sunroom is preferred. This way one will enjoy the fruits of their labor, with out going to the back forty.

If you are not fortunate to have full sun (6-8 hours of direct sunlight), part sun to full shade is okay as long as you understand the limits and drawbacks that can incur.

- Part sun (3-5 hours of direct sun) limits the choices of water lilies and other aquatics to choose from.
- All Shade means flowering plants won't work, and choosing plants for their texture and foliage colors is best. Choose colorful fish and they will be your flowers.
- If your pond is shaded for any part of the day, it may mean you have trees. Trees will shed their leaves or needles and you must be prepared to clean them out of the pond. (to be covered in more depth later in the manual).
- Beware of Oak Trees, they can cause ponds to turn brown and cause problems with the quality of the water.
- If you are close to trees, remember there will be roots to deal with when digging the water garden, this can add on to the cost of installation or give a do-it-yourselfer a headache, (I mean a backache).

Remember a well planned Water Garden will bring years of enjoyment, relaxation and be the envy of the neighborhood.

In Water Gardening Bigger is Better. The biggest complaint from Water Gardeners is they went to small the first time. Put 4 stakes in the ground or use a garden hose to determine maximum width and length, step back and see if you will visually have enough water garden to view.

Business Name

Once you have determined a size, now it is time to choose the liner.

Liners are divided into two categories;

1. **Flexible Liner**—a sheet of special material that allows the freedom of shape and depth. The most common flexible liner is 45 mil EPDM liner, a durable product that is fish and plant safe. There are other materials that are thinner and not recommended. Also we are keeping our eyes open for new liner material that would be more puncture resistant.
2. **Preformed Liners**— At this time we do not carry preformed liners. Preformed are made from either plastic or fiberglass. Plastic preformed liners allow for a smaller pond usually under 50 square feet to be made easily and inexpensively. But you are limited in shape design and depth. Most plastic preformed liners come with a 10 year guarantee against manufacturer defect and UV breakdown only. One must be careful in choosing preformed liners, not all are worthy of holding their shape after a few New England winters. Fiberglass preformed are the top of the line, made of a thick layer of fiberglass, they can be filled with water without any support unlike plastic preformed. They are very useful in creating backyard water gardens by the large selection of shapes, and using them in the filtration and water courses. Fiberglass is extremely expensive.

To choose the liner draw a square or rectangle on the outer parts of your dug hole or garden hose. Measure the longest length, the widest point, and know how deep you will make the water garden.

To size a flexible liner;

(Take the deepest measurement $\times 2$) + the longest length + 2 feet = length of the liner

(Take the deepest measurement $\times 2$) + the widest point + 2 feet = the width of the liner

A NOTE on the DEPTH of a POND.

A water garden should not be any shallower than 18". If you plan on creating a Koi Pond then plan on going 3 feet deep. But, you must check with your local town ordinances concerning any pond that will be more than 2 feet deep.

The Mighty Majestic: LOTUS

Lotuses are one of the most magnificent specimens of the backyard pond. They are hardy through out New England and will winter over in the water garden. Lotus require 6-8 hours of full sun. And need a large pot like the water lily, but they only like 2-4 inches of water of the top of their pot. These wonderful, exotic-looking plants will grow 3-6 feet out of the water, with blooms bigger than your hand. Their umbrella shaped leaves are water repellent and catches the eye of anyone passing by. Lotus come in a variety of colors, red, yellow, white, pink and lavender. The flowers can be single or double peony-like. The lotus bog garden is the best way to show off this wonderful specimen, and it is so easy!



Bog Plants or should we say Marginals?

Bog plants also known as marginal plants are shallow moisture loving plants. They come in both tropical and hardy species. They allow the water gardener a chance to accessorize the pond, hide certain features or mistakes, breakup the rocky edge and create a transition from the terrestrial plantings outside the pond to the water's edge.

Bog plants also are potted. Using a wider pot at least 16" in diameter will help allow the plant to mass giving a more natural look. Also you will need to divide it less often all plants are potted in a heavy clay like soil, except for the floating plants and the oxygenators. The only time we use bog plants bear rooted is in the wetland filtration system, this way the plants are housing beneficial bacteria and absorbing nutrients directly from the water.

Some of the more popular varieties of hardy bog plants are;

Pickeral Rush (*Pontederia cordata*), an upright plant growing 2 feet tall with dark glossy green leaves and blue or white flower spikes, a favorite of the butterfly.

Bull Rush (*Scirpus sp.*), the bull rushes are tubular leaves with different variegated forms and solid colors, it produces small brown tufted flowers that are insignificant. Bull rushes are great for a background and lending heights of 3-8 feet.

Cattails (*Typha species*), are the grand daddy to most ponds there are several species ranging in height from 2-10 feet. They have graceful flat grass like leaves that flow in the wind. They are distinguished by their brown catkin flower. **Iris species** make up a large group of choices including Siberian, ensata, Louisiana, laevigata and versicolor. Color ranges from white, pinks, violets, blues, yellow and red. When combined will give great color from May till July.

There are many, many more to choose from, stop by and check out our collection or stop by the library for a good book.

Water Plants

Queen of the Water Garden—Water Lilies

There are so many choices for water gardens plants, but the number one plant for water gardeners is the Queen of the Pond, the majestic water lilies. Don't plant a water lily directly into the pond, this is very difficult to keep control of the plants. Water lilies should be planted in a container at least 16 inches across and 7 inches deep. At a depth of 6-12" over the top of the pot. By keeping a water lily in the pot you can move it around to different areas and when it is time to divide and trim the water lily, it will be easily accessible. Don't worry about seeing the pot. A black pot will blend into a black liner and once a lily has started growing it will canopy the pot.



Water lilies are broken into two categories; Hardy which will survive most New England winters outside and Tropical that can be treated as an annual or stored inside for the winter. Hardy water lilies come in a variety of colors, red, yellow, white, pink and orange. They will continuously re-bloom through out the summer, each blossom lasting 3-4 days. The flowers open at around 10 am and close by 4 pm.

Tropical water lilies also come in red, yellow, white, pink and orange shades but also will have blue, purple and green. Tropicals are very fragrant and the blooms come up out of the water. Tropicals are broken into day bloomers, they open at 10 am and close by 4 pm. And, they also have night bloomers, which open at around 8 pm and close the following day at noon.

Water lilies prefer 6-8 hours of full sun to bloom strong. Some hardy varieties and including most day Tropicals will bloom with a minimum of 3-5 hours of direct sunlight.

Oxygenators

These submersible plants not only act as protection for young fry and tadpoles, they give off oxygen during daylight hours, but their biggest role is absorbing nutrients in the pond and helping to starve algae.



The "Green Monster" wants to live in Your Pond!

Green Water in the water garden is not necessarily a bad sign, but we don't like to look at it. Green Water is caused by a combination of factors. Overpopulation of fish, too much sunlight, possible pH problems, not enough beneficial plants, and poor filtration.

Keep the Green Monster at Bay.

There are basically 3 types of algae, the first being the harmless algae that grows along the sides and bottom of the pond, (this is our friend, not the green monster). The other two however can make or break a water gardener. Suspended algae, a free floating single cell plant-like can be a nuisance. This will give the look of pea green soup. The second monster is filamentous algae, your pond could be clear but this matting variety starts to grow and choke out plants and is quite unbecoming a serene water garden.



The size of the water garden will determine how to keep the pond clear. In a newly established pond, going through a green period is normal and once the pond and filter mature the green water will go away in approximately 4-6 weeks.

The first way to keep a pond clear is called "The Natural Approach", this can work successfully with ponds that are smaller than 40 square feet. In using this method the pond must be covered by **2/3 surface coverage** and using oxygenating plants. *The water gardener must keep the fish population low. The downside to this method is; it is dependent on the weather in the spring, if it is cool than the green period will last longer and you can have a green period every year. There are pond clarifiers such as Algae D-Solve when added to the pond once a week will **kill and inhibit future** growth of algae,

A note on pond algacides: We do not advocate algacides, they are only temporary solution and can cause more problems then they solve. Most algae killing chemicals are not toxic to fish life, but they do

Filtration

Wetland Filters

Wetland filters are our specialty. Wetland Filters are a natural and low maintenance way to having a clear pond. This method will allow the water gardener more open water to enjoy the fish or reflecting qualities of the water. The combination of bio-filter material and plant material, mostly water hyacinths combined with at least one perennial aquatic plant act both as a mechanical filter (settling out particulate debris), and housing for the beneficial nitrifying bacteria, (the good stuff that will keep the pond healthy for your pond pets). These plants will also absorb the free fertilizer that is produced by the bacteria and literally starve the algae in the main pond.

The Wetland Filter allows for a natural look instead of trying to hide a box or to try to "fish" one out of the depths of the water. As far as maintenance goes, one good cleaning in the spring will suffice. Flexible liner can be used as a lower cost choice but remember it is more man hours and labor intensive to initially install. The one down side to this system is it does take up more room than compared to an outside box type

Short on Space, Check out a Compact Filtration Unit

Not all box filters are equal, and the words "Biological Filter" **does not** equal clear water. Box filters should come with filter media such as "bio balls" or lava rock, sponges and an ultra violet clarifier (called an UVC). These three parts together should come with a clear water guarantee by the manufacturer. Another key point in choosing a box type filter is ease of maintenance. I for one like to keep water gardening chores to a minimum of work. Any submersible filter box is too hard to get out of the water.

Compact pressurized units sit outside of the pond or partially buried next to the pond, this will make maintaining the filter much easier. Cleaning the filter will depend upon how much silt and debris is in the main pond, usually once every two weeks. The down side to any box filter is trying to hide it, whether covering it up or sticking it behind the shrubs or under the porch.

Skimmers

Skimmers have really picked up in popularity as an easy way to collect falling debris (leaves, pine needles, etc.): it is also a great place to hide the pump and keep it clog free. Disposal of debris is easy by lifting the collection basket out of the skimmer and disposing of it in the compost pile.

The skimmer is part of the mechanical filtration that leads to the main filtering components whether a wetland filter or a compact biological filter and UVC. An active water flow must be maintained to catch the waste material, but it may not get all the falling leaves during the autumn season. Skimmers are easily disguised by rocks faux rocks or a planted pot.

Rocks, What is the Truth?

An idea by some is to line the pond with rocks,

1. There belief is that it will protect the liner from harmful UV light. This is not true because once the light hits the water it disperses the UV rays so as not to be damaging.
2. It adds more area for beneficial bacteria to grow. It will in the beginning but then as fish feces and other debris build up it starts to create an oxygen depleted area amongst the rocks. In this oxygen deprived area a bad bacteria will grow and give off a toxic gas, hydrogen sulfide. This gas smells like sewage and can kill the fish, sometimes overnight.
3. They say Mother Nature has rocks on the bottom of her lakes and ponds, she can do it and keep it natural. Alas, mother nature also has a cleaning method of turning the water over by allowing fresh water from streams and springs to enter and another stream overflow exiting the pond and taking ammonia and toxic gases with it.
4. By keeping the pond empty of rocks on the bottom it allows for an easy fall cleanup of leaves and an easy spring cleaning of silt off of the bottom. They want you to do a complete water change, draining all the water out, pressure washing it down and fill it back up. This is not good for the fish or your well or your pocketbook if you are on a municipal water source. After cleaning a pond filled with rocks, you will ask your self why you wanted those stones in there?. Then, you will understand why it will cost so much to clean it. Water Gardening is suppose to be fun.
5. They say a gravel bottom pond is more natural looking, It actually takes away the depth perception, making the pond look shallower. And all those pretty rocks (the pink ones, the sparkly ones, etc.) will be covered with natural algae growth giving the pond a dirty look. The black liner hides the natural algae growth and gives the illusion of the pond being deeper than it really is.

Rocks are for coping the edge and lining the streams and waterfalls.

Remember water gardening is suppose to be fun and low maintenance!