A beginner's guide to water gardening

Laguna

Building the perfect pond

Beautifully simple water gardening

www.lagunaponds.com

Building the Perfect Pond

Water gardening is increasingly becoming a popular hobby. And why not? Water gardens add a unique dimension to homes and even with limited space, you can design a water feature that brings the beauty of nature into your backyard. Thanks to pond equipment such as Laguna pumps, filters, and liners, you can easily create your own backyard aquatic oasis. This guide will show you how.

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Planning ahead

The key to a beautiful pond is planning ahead. Before picking up your tape measure and shovel, take the time to plan out your pond. This will not only prevent mistakes, but it will also save time and money.

Take a good look at the layout of your land. Selecting the right site for your water garden is essential. Consider the following guidelines that will help you choose the best site for your water garden.

A Choose a location that receives a minimum of 6 hours of sunlight per day. Most aquatic plants flourish in sunlight. However, do not choose an area that gets direct sunlight all day, as this could cause the pond to overheat and make it more difficult to maintain.

B Find a spot away from overhanging trees, as falling leaves that may pollute the pond water will decompose and cause problems. In addition, roots will also hamper digging and potentially change the shape of your pond or cause damage to pre-formed ponds.

C If possible, use natural slopes in your yard to create waterfalls and other landscape features.

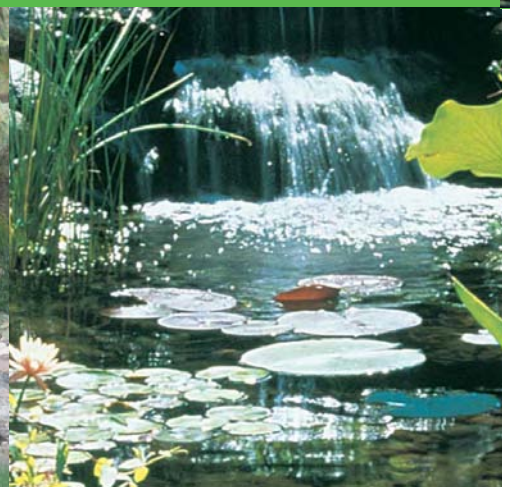
D Choose a level area in an open location, preferably where it can be seen and enjoyed from the house or patio.

E Choose a location near a water source. Small ponds can easily lose 1 inch per day due to evaporation. You'll need to top up pond water on a regular basis.

F Choose an area close to an electrical source with at least 2 G.F.I. rated electrical outlets. However, four outlets are preferable. This would allow you to connect two pumps and a UV Sterilizer while still having one outlet left for other useful equipment such as pond lighting or additional pumps for spitters.

NOTE OF CAUTION: Children are drawn to water. Take the necessary steps to ensure that your pond is safe. Always monitor young children near ponds or open water of any kind.

The right pond size



Water gardens come in all sorts of styles and sizes. Which one is right for you?

1 to 5 Gallon Ponds – offer a carefree way to enjoy small water plants up close.

20 to 40 Gallon Ponds – get your feet wet. Provide a serene area for you to enjoy small to medium sized pond plants. You can also have a small pump and maybe even a goldfish. Even better – they're easy to maintain.

50 to 500 Gallon Ponds – a great place to start, not a big commitment. However, once you discover your enthusiasm for pond keeping, it won't be long before you're making plans to expand.

500 to 3000 Gallon Ponds – this size will allow you to keep fish and a large variety of pond plants. Consider location, filtration and the number of plants and fish that you want to keep when planning your pond.

3,000 Gallon Ponds and over - many people find water gardening and fish keeping to be the hobby of their dreams and will invest the time and money to get the maximum enjoyment out of their water garden. With water gardening the only limit is your imagination.

Pond style

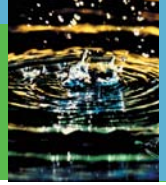
Once you know the size of your pond and selected your location, you need to decide on either using a pre-formed or liner-type pond.

There are several advantages to using a pre-formed pond. They take a lot of the guesswork out of designing your water garden. They are made of heavy-duty, rigid polyethylene, are designed to withstand extreme conditions such as hot summers and frigid winters, and they come in a variety of shapes and sizes. The disadvantage is that you are limited to the pre-formed shape.

A pond liner offers many advantages when designing your water garden. The soft rubber liner is highly flexible and durable, which make them ideal for custom installations. However, be careful what you buy. Some liners are not intended for pond use and can contain oils and fungicides that are harmful to fish and plants. Laguna 45-mil Durashield Pond Liners are fish-friendly and durable - they're guaranteed for 20 years!

You will also have to decide whether you want a waterfall or a fountain or perhaps both. Remember, a pond is a combination of tranquil sounds, movement and color. By creating a pond, you are bringing the beauty of nature into your garden. The sensory dimension that your pond will add will amaze and delight you.

Building a pond with a pre-formed pond



Building a pond with a pre-formed pond

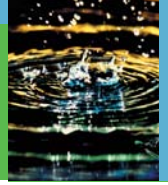
Laguna pre-formed ponds are available in a wide variety of shapes, sizes and depths. Many come with pre-contoured shelves and steps. Choose a style that best suits your garden and selected location. Another point to consider when selecting your pre-formed pond is water depth. If you wish to winter your fish in a harsh climate you will need to select a pond with a depth of at least 4 feet therefore a liner may be more suitable.

Installing a pre-formed pond:

1. Place the pond in position and carefully mark out its shape with pegs (ill.1). DO NOT place the pre-formed pond upside down to outline the shape, or your hole will not match the shape of the form. Position the pond right side up in the exact place you want it and use it as a guide or template while digging around the stakes. Make your outline 4 – 6 inches larger than the pond itself.
2. Check the first level and start digging down to the shelves.
3. Reposition the pond, mark out the inner deeper section and continue digging out to the bottom. Be sure that the hole is slightly deeper than the actual depth of the preformed pond and verify that the bottom is level. Remove any stones or roots that may pierce the pre-formed pond when the weight of the water is added.
4. Once you are satisfied that the hole is the proper size, depth and orientation, add about 2 inches of sand to the base level and shelves (ill.4). This will protect the liner from damage due to exposed roots or rocks.
5. Insert the pre-formed pond and make a final check to make sure it is level (ill.5). Back-fill any spaces left from digging with sand.
6. Now you are ready to add water. The weight of the water as it is added will help the pre- formed pond settle into place.

DURASHIELD PRE-FORMED PONDS	DIMENSIONS	VOLUME	THICKNESS
WATER BASIN PT-786	26″ dia x 12″ 66 cm dia x 30.5 cm	18 U.S. GAL (68 L)	150 mm
SPILLWAY PT-789	54″ x 30″ x 17″ 137 cm x 76 cm x 43 cm	50 U.S. GAL (189 L)	187 mm
SIMCOE PT-790	39″ x 28″ x 15″ 99 cm x 71 cm x 38 cm	32 U.S. GAL (122 L)	187 mm
CHAMPLAIN PT-791	59″ x 39″ x 18″ 150 cm x 99 cm x 46 cm	72 U.S. GAL (272 L)	150 mm
TAHOE PT-792	71″ x 50″ x 18″ 180 cm x 127 cm x 46 cm	150 U.S. GAL (568 L)	150 mm
HUDSON PT-793	90″ x 58″ x 18″ 229 cm x 147 cm x 46 cm	192 U.S. GAL (727 L)	150 mm
HURON PT-794	58″ x 94″ x 18″ 147 cm x 239 cm x 46 cm	264 U.S. GAL (1000 L)	150 mm
ERIE PT-797	60″ x 47″ x 24″ 152 cm x 119 cm x 61 cm	144 U.S. GAL (545 L)	150 mm
SUPERIOR PT-798	70″ x 55″ x 24″ 178 cm x 140 cm x 61 cm	180 U.S. GAL (681 L)	150 mm

Building a pond with a pond liner



Building a pond with a pond liner

For those who want to design an original pond, Laguna 45 mil EPDM Pond Liners allow you to create a unique and natural looking water garden. Before you go out and buy a liner, you will need to calculate the correct size. Use the following formula or the calculators found at www.lagunaponds.com to help calculate the size of liner you will need.

First, determine the maximum length, width and depth of your pond.

Then, double the depth and add it to the values of the length and width. Once you have this measurement add 2 feet for overlapping the pond edge. This will give you the correct size that you will require.

Here's an example:

If you're building a pond that's 6 ft wide x 8 ft long x 2 ft deep, do the following calculations:

2 feet in depth x 2 = 4 feet
6 feet in width + 4 feet = 10 feet
8 feet in length + 4 feet = 12 feet

Now calculate 10 feet + 2 feet = 12 feet for the total width and 12 feet + 2 feet = 14 feet for the total length. You will need a liner that is 12 x 14 feet.

1 Once you have decided on your design, outline the shape that you want to create using a rope or hose. Mark the depth of shelves for planting.

2 Dig out the hole, making sure to create internal shelves for planting. Use a plank and level to ensure that the hole is level. Check for any sharp stones or tree roots that may puncture or damage the liner.

3 Add a layer of sand or geo-textile. This will protect the actual liner from damage due to exposed roots or rocks.

4 Now it is time to lay in the liner. Let it warm in the sun briefly to make it more flexible and easy to handle. (Do this on a driveway, never on grass as the heat will quickly damage grass).

5 Add some water so that the liner starts to settle into place. It is impossible to eliminate all wrinkles so let the weight of the water form the natural flow of the liner and gently pull the liner as the pond fills trying to keep the wrinkles to a minimum.

6 Lay patio stones or slate around the perimeter of the pond. This will hold the liner in place and create a decorative touch. Use mortar or foam to keep these decorative pieces in place.

7 Keep filling the pond with water. The liner will stretch and mould itself to the shape of the pond and adjust the weight as the liner settles. Be careful when filling the pond with water. If the liner is allowed to contort and stretch too much it may be damaged.

8 Once the pond is full, trim off any excess liner from around the edge of the paving slabs, leaving an overlap of at least 6". Make sure that the trimmed liner is above the desired water level.

TIP – After placing all rocks and edging, empty the water from the pond as it will be dirty from the mortar and rock debris. The simplest way to do this is with your pond's filter pump. Ensure that the pump outlet hose is a good distance away from the pond as the mortar may discolor your lawn for several weeks.

Adding a waterfall

Whether you have a pre-formed or liner pond, the following steps are common to both.

If you decided to create a simple pond all you need to do is add water, decorate and enjoy your creation. However, if you've decided to do a little more planning and work, you can enhance the beauty of your water garden by adding a waterfall. A waterfall is very beneficial as it will provide needed oxygen while adding the soothing sound of running water.

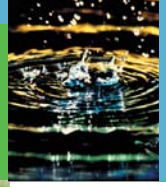
Whether pre-formed or a liner and natural rocks, your waterfall will need to be carefully checked for water leaks and steady flow in order to prevent water loss or stagnant areas. Ensure that the base of your waterfall is solid. Fill any gaps or crevices with sand or soil and tamp into place. Make sure that the upper levels overlap the main pond or liner to assure a smooth flow of water. Although the waterfall may look artificial to start, it will quickly become more natural looking as your pond ages and matures. Adding live plants will also make the waterfall look more natural.

As much as possible, conceal the hose from your water pump. To achieve this you can use rocks, small stones, mulch and plants.

Planning ahead will help you determine if you want flowers or ornamental shrubs planted around or alongside your waterfall. The addition of Laguna lighting and ornaments can also make a striking visual effect of your pond.

Once you have achieved the waterfall look you want, it is time to add the water.

The water may appear cloudy or dirty depending on your type of installation. Don't worry about this. As soon as you have your water accessories installed, it will clear up quickly. Now the fun begins, tweeking and tuning the waterfall for sound and flow.



Choosing a pond pump

Any water garden will benefit from the use of a pump. Water must flow constantly for effective filtration to take place. Filtration is critical in keeping pond water healthy, clean and clear. Fish and plant life will thrive in a well-circulated pond. Without water circulation and filtration your pond could suffer from a lack of oxygen and, consequently, poor water quality.

Before buying your pump, you must first determine how much work you are asking it to do. Will it just circulate water or will it pump water through a U.V. sterilizer, waterfall, fountains, ornaments, and filter. Answering these questions will help determine the size of your pump. The more features you add, the more work you are asking your pump to do, and therefore, the more powerful it has to be. Also, it is a good idea to buy a pump with a capacity slightly greater than your initial needs, especially since you may want to add to your system later.

To keep ponds healthy, a general rule of thumb is that pond water should be circulated at least once every two hours. A 500-gallon pond, for example, requires a pump capable of generating a minimum flow of 250 gallons per hour. To figure out the volume of water your pond will need to circulate use the following calculation. *Please note that you should state measurements in feet for these calculations.*

For a square or rectangular pond:
Length x Width x Average Depth x 7.5 = Total gallons

For a round pond:
0.785 x (Top diameter x Bottom diameter x Depth) x 7.5 = Total gallons.

Another important factor in choosing the right pump for your pond is "Head Height".

Fountains and waterfalls reduce flow (gallons per hour) available for circulation. This flow reduction depends on the total head height, which is the distance from the pond surface to the top of the fountainhead, plus the distance from the water surface to the top of the waterfall.

Example:
A 500 U.S. gallon pond, with a 1' fountain head and a 2' waterfall (total head height of 3') requires a pump capable of producing a minimum 250 GPH (U.S.) flow at a 3' head height.

Two other factors to consider before buying a pump is the width of your waterfall and the length of hosing used to connect the pump to equipment. You need an additional 75 to 100 GPH in flow rate for every inch in width of your waterfall. In addition, you must calculate one foot of head height for every ten feet of hosing used in the entire system.

Choosing a pond pump

It is always a good idea to buy a larger pump than you require initially, as it will allow you to add additional equipment or more flow to the waterfall if the need arises.

After you've calculated:

A) The total gallons of water in your pond
B) The total head height of fountains and waterfall
C) The width of your waterfall
D) The total length of hosing used

Refer to the LAGUNA POWERJET and MAXFLO Pump Performance Charts to determine which model you need. Laguna has a wide variety of pumps to meet all your water garden needs.

Your pump must be submerged in your pond. The intake should be positioned away from any potential flow obstructions such as plants or a side wall.

When installing a pump it is important to read and follow all instructions.

MAX-FLO

MAXIMUM HEAD HEIGHT / FLOW RATE/GPH (U.S.)	5'-10" MAXIMUM HEAD HEIGHT	6'-4" MAXIMUM HEAD HEIGHT	13'-5" MAXIMUM HEAD HEIGHT	12'-3" MAXIMUM HEAD HEIGHT	12'-2" MAXIMUM HEAD HEIGHT	14'-9" MAXIMUM HEAD HEIGHT
						14' 793
			13' 290	12' 105	12' 132	13' 1141
			12' 449	12' 528	11' 660	12' 1347
			11' 607	11' 766	10' 924	11' 1585
			10' 700	10' 924	9' 1135	10' 1744
			9' 845	9' 1083	8' 1320	9' 1854
			8' 951	8' 1268	7' 1479	8' 1981
		6' 92	7' 1056	7' 1373	6' 1664	7' 2140
	5' 137	5' 280	6' 1162	6' 1479	5' 1796	6' 2251
	4' 254	4' 422	5' 1215	5' 1585	4' 1954	5' 2409
	3' 351	3' 565	4' 1320	4' 1690	3' 2060	4' 2504
	2' 433	2' 686	3' 1386	3' 1796	2' 2193	3' 2631
	1' 515	1' 803	2' 1479	2' 1876	1' 2298	2' 2747
			1' 1532	1' 1876		1' 2800
GPH (U.S.)	600	900	1500	2000	2400	2900
WATERFALL & FILTER PUMP	PT-340	PT-342	PT-344	PT-346	PT-348	PT-350
MAX-FLO	600	900	1500 ELECTRONIC	2000 ELECTRONIC	2400 ELECTRONIC	2900 ELECTRONIC

POWERJET

MAXIMUM HEAD HEIGHT / FLOW RATE/GPH (U.S.)	2'-7" MAXIMUM HEAD HEIGHT	4'-3" MAXIMUM HEAD HEIGHT	5'-7" MAXIMUM HEAD HEIGHT	5'-10" MAXIMUM HEAD HEIGHT	6'-4" MAXIMUM HEAD HEIGHT	8'-6" MAXIMUM HEAD HEIGHT	13'-5" MAXIMUM HEAD HEIGHT	12'-3" MAXIMUM HEAD HEIGHT	12'-2" MAXIMUM HEAD HEIGHT	14'-9" MAXIMUM HEAD HEIGHT
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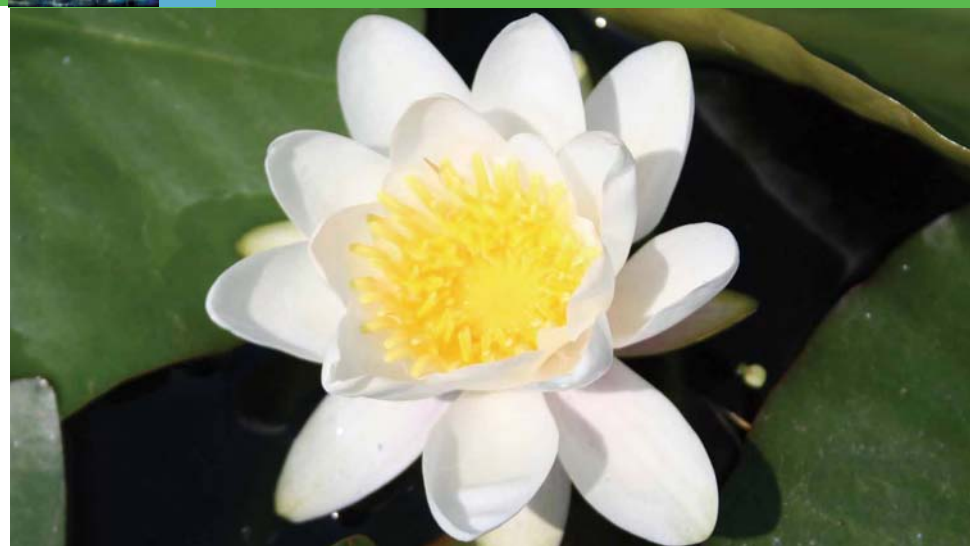
	1' 79	1' 177	1' 335	1' 515	1' 803	1' 1207	2' 1479	2' 1876	1' 2298	2' 2747
							1' 1532	1' 1876		1' 2800
GPH (U.S.)	100	200	400	600	900	1300	1500	2000	2400	2900
FOUNTAIN PUMP KIT	PT-320	PT-322	PT-324	PT-326	PT-328	PT-330	PT-332	PT-334	PT-336	PT-338
POWERJET	100	200	400	600	900	1300	1500 ELECTRONIC	2000 ELECTRONIC	2400 ELECTRONIC	2900 ELECTRONIC

Filtration



All ponds will benefit from the addition of a filtration system. Filters keep ponds clean, clear and healthy. Without a filter, water quality can suffer. Impurities could accumulate and create a toxic and cloudy environment.

Filters perform three filtration functions: mechanical, biological and chemical.

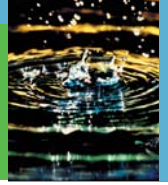
Mechanical filtration refers to the following process: as dirty water flows through filter foam or other mechanical media it traps dirt and debris. Filtered water returns to the pond free of debris. A filter foam must be as fine as the debris it is removing.

Biological filtration refers to the process of providing an area where beneficial bacteria can grow and multiply. This is important to biologically break down harmful toxins such as ammonia from fish waste and respiration. An ideal media to support large colonies of beneficial bacteria is Laguna Bio-Max. Bio-Max is pre-packed with a mesh bag for convenient placement and can be added to almost any filter.

Once biological toxins are broken down, chemical filter media and pond plants can help to control the resulting compounds.

Chemical filtration refers to the process of controlling and changing specific water conditions. This does not mean that the media is a chemical. Products such as Laguna Phos-X will trap phosphate, nitrite and nitrate. Natural products can be considered chemical media.

Choosing a filter



Choosing a filter

Laguna offers a wide range of filters to suit your pond needs. Remember you can never have too much filtration.

PowerFlo Internal Filters:

Submersed in the pond, internal filters provide pre-filtration for all pond pumps and reduce the frequency of maintenance. Although these underwater filters are ideally suited for ponds up to 800 gallons, expansion chambers for the PowerFlo Underwater Filter are available separately.

PowerFlo Mechanical Underwater Filter removes dirt and floating debris to improve water quality and clarity. It also protects the pond pump from clogging and thus reduces maintenance. It can be positioned near the pond's edge, opposite the waterfall (if present), for quick access and easy maintenance.

PowerFlo Max Biological Underwater Filter is ideal for use in ponds that contain fish. The filter provides the same powerful mechanical filtration as the PowerFlo, plus it features biological filtration with Laguna's patented Bio-Max filter material. The efficient ceramic media provides a huge surface area for beneficial bacteria to thrive. This media will support the decomposition of ammonia and nitrite to less harmful nitrate, which can be controlled by aquatic plants and water changes.

PowerFlo UnderWater Round Filter is equipped with a large 19" surface that allows water to flow through easily while trapping suspended debris. The filter comes complete with mechanical, chemical and biological filter media. This filter can be connected to all Laguna Pumps. In addition, it can provide a stable base for fountainheads as well as two pond lights. It also serves as a pre-filter, preventing the pump from clogging & reducing pump maintenance.

Its low-profile design is perfect for ponds as shallow as 5 inches (18 cm). Small or medium sized pebbles can also be placed on top of the filter providing additional mechanical and biological filtration.

Pressure-Flo Filters:

Laguna Pressure-Flo Filters are high performance water filtering systems that keep pond water clean and healthy. These all-in-one filters provide mechanical, biological* and UV Sterilization and are designed to work in tandem with a solids handling pumps such as Laguna's Max-Flo. They also feature a revolutionary Backwash-Cleaning System that easily cleans the entire surface of the foam filters without opening the filter. This patent-pending system is one of a kind. Backwash cleaning can be done easily and comfortably in a few minutes without opening the lid. This feature ensures that the filters perform at optimal levels for many days and prolongs the time between full maintenance sessions. An easy-view cleaning indicator signals when it's time to perform backwash cleaning.

* Pressure-Flo 700 does not have a biological filtration chamber.

PowerFlo External Filters:

The Laguna PowerFlo Skimmer Filter 5000 and PowerFlo Filter Falls 5000 are both high performance filters that provide the ultimate water management solution for large ponds up to 5000 US gallons (18,925 liters). In addition, Laguna Filter Falls can be connected to the Skimmer Filter for extra filtering capacity for ponds up to 10,000 US gallons (37,850 liters). Each filter has a list of key benefits, including clear and healthy pond water, low maintenance and of course, a pleasant water garden environment you can be proud of.

Laguna PowerFlo Skimmer Filter features 3 large capacity chambers that can accommodate special filter pads as well as biological and chemical media. The first chamber is super-sized and designed to collect leaves and other large debris. As water flows through the media chambers it is thoroughly filtered. The result is clean and healthy pond water for fish and plants to thrive in.

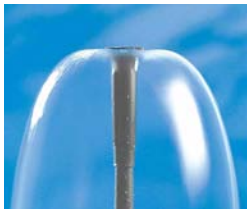
Laguna PowerFlo Filter Falls features three large-capacity filter chambers that can accommodate special filter pads as well as biological and chemical media. As water flows through the media chambers, it is thoroughly filtered. The result is clean and healthy pond water that allows fish and plants to thrive.

The Filter Falls unit comes complete with a spillway. The water exits the filter through this 19-inch spillway to create a captivating waterfall. Threaded bulkheads on the spillway allow you to divert water to small waterfalls, streams or other filters.

Installing

Installing a fountain

A fountain can help aerate pond water and provide soothing water sounds. It is installed by submerging the pump in the desired area and making sure it is level and unobstructed. Adjust the water flow for the desired height and fountain head spray.



When installing a fountain, it is important to read and follow all instructions.

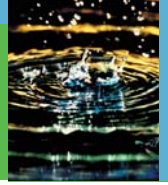
Installing a UV Sterilizer

You may want to consider the addition of a UV Sterilizer to work in conjunction with your filter to help control green water. UV Sterilizers eliminate green water and create beneficial pond conditions for fish and plants.

When installing a UV Sterilizer, it is important to read and follow all instructions.

Install lighting

The addition of underwater and accessory lighting can make a pond come alive at night. Make sure to plan ahead if you intend to add lighting and have the extra electrical GFI outlet nearby. Experiment with the direction and color of your lighting until the desired look or mood is achieved.



Adding plants

The addition of plants to your pond will complete its natural look. However, care should be taken in the selection and placement of plants in or around your water area. There are four categories of pond plants:

Oxygenating Plants

Fish and water quality benefit greatly from oxygenating plants. These plants use fish waste as fertilizer and provide oxygen to the water. In addition, they help maintain a natural balance for your pond by competing with algae for any nutrients in the water thereby limiting the growth of algae. It should be noted that plants may not be able to provide all of the oxygen necessary for your pond's livestock, so help may be needed from a fountain waterfall or aeration kit.

Floating Plants

Floating plants, including lily pads, should cover a large percentage of the surface area of your pond. This will inhibit algae development and provide important shade, which will in turn aid plants like water lilies until they mature and have leaves large enough to take over this role.

Depending on the type of floaters you have, it is important to wait until the risk of frost is over before introducing them to your pond.

Deep Water Plants

These plants, water lilies for example, provide decoration, flowers and shade and shelter for fish and other inhabitants of the pond.

Marginal Plants

The heart of natural filtration, these plants are placed in planting pots or planted in a naturalized pond and submerged on pond shelves so that water covers the pots by a only couple of inches. These plants give a natural, soft appearance to your pond as well as adding colour.

Avoid placing most plants directly in the path of the water flow as this may inhibit their growth.

TIP

Laguna Once a Year Fertilizer Pond Spikes are specifically designed for potted pond plants. Easy to use and effective, they are inserted into the soil near plant roots, supplying important nutrition to aquatic plants for one full year.

For more information on plant care consult the Laguna Pond Planting and Care Guide (S-2120) or visit www.lagunaponds.com.

Adding fish

Now that all the essential components have been installed to sustain a healthy pond environment it's time to add your pond fish.

Fish add color, movement and grace to your water garden. However there are several rules of thumb that should be reviewed before you add your fish.

Limit the initial number of fish you introduce into your pond, as they produce a lot of waste. This waste is potentially toxic to them, better to have too few than too many. Fish will often reproduce and grow quickly in a pond environment.

Treat them with great care. Any handling or transportation, even introducing them to your pond, can induce stress.

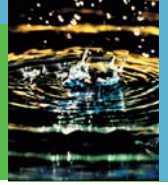
1. Introduce them to the pond slowly, matching the water temperature by floating the bag in the pond before release.
2. Additionally, you can add a little pond water into the bag to help them get used to any differences there may be in water quality.
3. After approximately 20 minutes of this gradual introduction process, you may release your fish into their new home.

   Any handling of the fish should be minimal. Use a soft net to handle them.

TIP

When adding fish to your pond, treat the water with Laguna Water Prep. This product makes tap water safe for fish and plants by eliminating harmful chlorine or chloramine and neutralizing toxic metals. In addition, it coats and protects fins and scales that could have been damaged when fish are handled or transported.

For more information on fish care consult the Laguna Pond Fish Care Guide (S-2115) or visit www.lagunaponds.com.



Maintaining clear water

Warm temperatures, intense sunlight, and the accumulation of organic waste are factors that can contribute to an unattractive pond. There are a number of products available that can help offset the results of these environmental conditions.

One of the best things you can do to control and prevent cloudy water is to ensure that your filter is clean and working to capacity. To increase the utility and productivity of your filter, adding filter media such as LAGUNA PHOS-X will help absorb and trap phosphate, nitrite and nitrate. Phosphate and nitrate in particular, are major nutrients that can lead to undesirable pond conditions.

Other helpful products include:

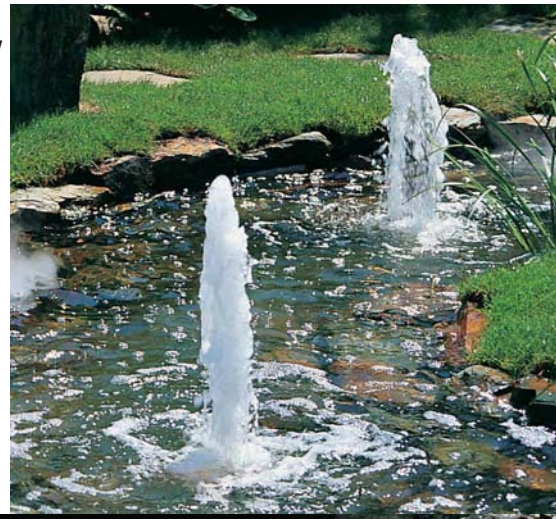
Laguna Barley Straw Pellets: a completely natural product that supports clean pond conditions and is beneficial to plants.

Laguna Peat Granules for Ponds: a natural product that will help support excellent water quality. Pond peat produces a natural amber tint that acts as a light filter, which reduces the amount of sunlight penetrating the water surface. In addition, it contains acids that aid in lowering both KH and pH levels.

You may also want to consider the addition of a UV Sterilizer to control green water. UV Sterilizers prevent and eliminate green water and create beneficial pond water conditions for fish and plants.

For a "quick fix", add a traditional water treatment, such as Laguna Clear Fast. This product's fast acting formula helps clear cloudy or green water by causing minute particles of organic waste to clump together. The filter easily traps the resulting clumps. In addition, Laguna Filter Wool should be used in your filter to help remove debris.

Laguna Phosphate Control is an excellent preventative measure against undesirable pond conditions, as it helps reduce phosphates naturally. It also adds beneficial micro-organisms, improving biological filtration and water quality.



Helpful Tips:

1. Always treat pond water before adding live stock. Chlorine and chloramine in tap water may kill or injure fish. Use Laguna Water Prep for fast and effective dechlorination.
2. Keep sharp objects away from pond liners.
3. Install pumps on bricks or blocks keeping them from the bottom of the pond to minimize clogging.
4. The maximum height of your fountain should not exceed half the width of your pond.
5. Allow for 1 inch of fish per square foot of surface area. You can allow 2 inches per square foot with improved filtration from a Laguna Skimmer Filter or Filter Falls.
6. If you are going to keep large Koi, they should be kept in large, well filtered ponds. The pond should be at least 3 ft (1 m) deep.
7. Oxygenating plants provide oxygen only during daylight. Fish can suffer stress during warm, still nights unless extra oxygen is supplied. Water agitation created by a splashing fountain or waterfall is ideal.
8. Although most pumps operate using a normal electrical supply, the installation should be a permanent one using a GFI (Ground Fault Interrupter). Always use cables and connectors designed for outdoor and water garden use. Have your system installed or checked by an electrician.
9. The finishing touches. It's important to choose the right fish and plants for your pond. Consult your local pet shop and garden center for advice or find more information at **www.lagunaponds.com**.

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