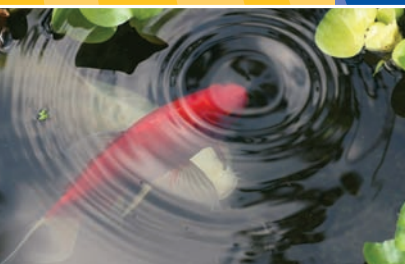




# A beginner's guide to stocking and caring for pond fish

*Beautifully simple water gardening*



[www.lagunaponds.com](http://www.lagunaponds.com)

# FISH CARE GUIDE

Fish add color, movement and grace to your water garden. It is important to remember that they are living creatures. Treat them with care and they will repay you with years of enjoyment.



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# SELECTING FISH

The size of your pond will help determine the number of fish it can accommodate. Overstocking needs to be avoided as fish produce waste. This waste is potentially toxic to them so it is better to have too few than too many. Fish will often reproduce and grow quickly in a pond environment. A general rule of thumb is to allow 1 inch (2 cm) of fish for every 13 US gallons (50 liters) of water.

**Note:** Koi are specialized fish and need more space in a pond than goldfish.

## Tips for selecting healthy fish:

- Clear Eyes (not cloudy)
- Undamaged fins
- Scales should be intact, parallel with body (not sticking outwards) and no red blotches
- No holes, ulcerations, or lumps
- Active, lively, normal swimming patterns
- No white spots (salt grain size) or white cottony growths on the fins or body
- Respiration rate should be regular and steady (in unstressed circumstances)
- Gills should be red inside, not faded or discolored, and not distended or puffy.
- Actively feeding
- Avoid selecting fish from a system that contains any sick specimens

Choosing fish that are healthy from the beginning will help avoid problems.



## Goldfish:

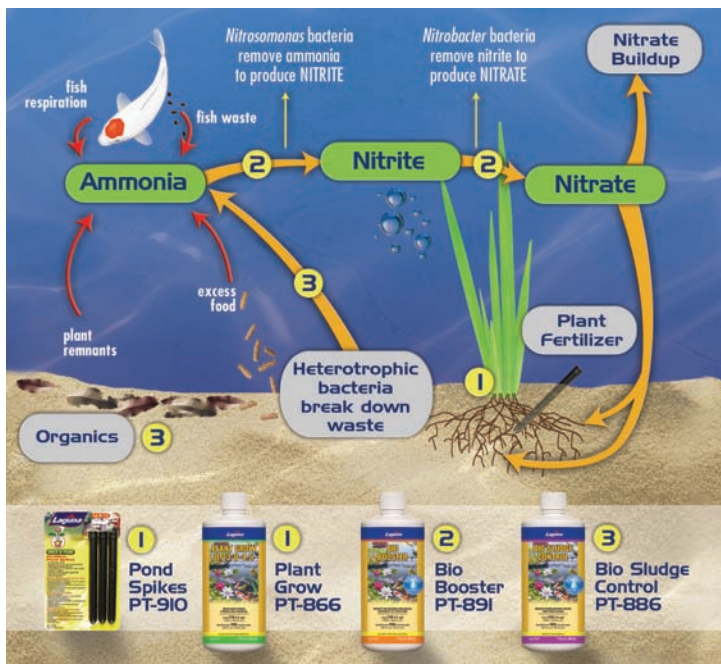
Goldfish can be kept in smaller ponds than Koi. They have been cultured for centuries and a variety of different species are available. Among the characteristics that determine the different varieties are tail length, color, and the absence of a dorsal fin. Goldfish can grow to 12 inches (30 cm) in length. Common varieties include: Sarasa, Comets, Red Fantails and Shubunkins.



## Koi:

Koi (carp) are the most well recognized pond fish. They come in a variety of different color patterns. Some koi have been reported to live up to 75 years and reach over 3 feet (0.9 meters) in length.

# NITROGEN CYCLE



## The Nitrogen Cycle

The Nitrogen Cycle refers to the conversion of toxic compounds - ammonia, nitrite and nitrate that are produced in all aquatic environments. Although this looks a little intimidating, understanding the process will give better insight into how your water garden functions biologically. When looking at the Nitrogen Cycle, we can break it down into four phases.

**Phase one:** The cycle begins when fish eat and then excrete ammonia. Decaying plant material also adds to higher ammonia levels in the pond. Ammonia is toxic to fish and must therefore be removed from the pond. The higher the pH of the water, the more toxic Ammonia will be. If you have a high pH above 7.5 and are having trouble with fish, test for ammonia.

**Phase two:** A species of nitrifying bacteria called nitrosomonas converts ammonia into nitrite. Nitrite is also toxic to fish and needs to be removed

or changed. This takes approximately ten days, if the pond is not supplemented with Laguna Bio Booster. The bacterium that breaks down Nitrite is much slower to reproduce naturally than the bacteria that controls Ammonia. This is why it is important to supplement with Bio Booster especially in the Spring or when adding fish. If you have a low pH, 7 or below and are having trouble with fish, test for nitrite.

**Phase three:** A second group of nitrifying bacteria called nitrobacter converts nitrite into nitrate. Nitrate is non-toxic to fish in small quantities and is used by plants as fertilizer. This conversion period takes up to twenty-one days, after which the nitrite should be almost gone. We recommend using Laguna Bio Booster to speed up the process.

**Phase four:** Algae and aquatic plants use nitrate to produce chlorophyll, which in turn is consumed by fish. The cycle then repeats itself.

# INTRODUCING FISH TO YOUR POND

Treat your pond fish with great care. Any handling or transportation, even introducing them to your pond will cause stress.



Introduce your fish to the pond slowly, matching the water temperature by floating the bag in the pond before release. Keep in a shaded area as the sun can quickly raise the temperature in the bag.



Additionally, you can add a small amount of pond water to the bag to help them get used to any differences there may be in the quality of water.



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 and only a soft net should be used.



## TIP

Treat your pond water with Laguna Water Prep before adding fish. It eliminates harmful chlorine or chloramine from newly added tap water, immediately making pond water safe. It will also neutralize toxic metal ions before they can harm fish. In addition, it coats and protects fins and scales that could have been damaged when fish were handled or transported.

# FEEDING YOUR POND FISH



Depending on the water temperature, pond fish have different nutritional requirements and feeding habits. At water temperatures of 50 °F (10 °C) or above, fish feed up to four times daily, but only as much as they can consume in two minutes. It is better to feed in small portions where everything is eaten, resulting in less waste and pollution.

In winter, when the water temperature drops below 45 °F (7 °C), pond fish require no food. At below freezing temperatures fish become dormant.

Never overfeed your fish. Excess food will pollute the pond water, so only feed amounts that will be completely consumed by your fish within 2 minutes.



## TIP

It is important to ensure that you do not feed your fish too early in the season. Koi and goldfish have trouble digesting food at colder water temperatures. Start feeding when the water temperature reaches 47 °F (8 °C). Make sure that you have a good thermometer so you'll know when it's time to start feeding.

*Laguna Floating Thermometer is ideal. The thermometer includes an easy viewing window with large temperature indications for quick readings. It comes with a handy anchoring cord and is designed to float on the water surface for easy access.*



# FEEDING YOUR POND FISH

It is important to feed your pond fish a high quality diet, like Laguna Premium Koi and Goldfish food, to supplement the natural foods that are found in your pond (such as insects and plant matter). By feeding your fish a quality food you are ensuring that they are receiving a correctly-balanced diet.

Laguna Goldfish and Koi foods are highly nutritional, easy to digest and contain an ideal combination of vitamins and minerals including stabilized vitamin C which helps improve disease resistance, allowing fish to live long, healthy lives. As a result of Laguna's superior formulation, fish do not require as much food and less waste is produced.



## Fish Food Treats

Laguna fish food treats are available in two flavors, orange and lemon as koi love and are attracted to citrus. The extruded format enables the food to be fed to any size of fish.



## Floating Feeding Station

The Laguna feeding station floats on the surface of the pond conditioning fish to feed from a pre selected area. This helps prevent over feeding and wasted food. The ring is easily anchored to the side or bottom of the pond.



# FEEDING YOUR POND FISH



## All Season Flake Food

(PT108) 12 oz/350 g

- For all seasons, when water temperature is above 50 °F (10 °C)
- Complete balanced diet for all cold water fish



## All Season Food Sticks

(PT112) 8.5 oz/240 g

(PT113) 17 oz/480 g

(PT114) 3.3 lb/1.5 kg

- For all seasons, when water temperature is above 50 °F (10 °C)
- High quality staple diet



## Spirulina & Wheat Germ Food Sticks

(PT117) 10.5 oz/300 g

(PT118) 21 oz/600 g

(PT119) 2.2 lb/1 kg

- For Spring & Fall, when water temperature is above 47 °F (8 °C)
- High grade spirulina and wheat germ



## Color Enhancing Food Sticks

(PT122) 11 oz/310 g

(PT123) 22 oz/620 g

(PT124) 3.3 lb/1.5 kg

- For all seasons, when water temperature is above 50 °F (10 °C)
- Highly nutritious sticks, rich in krill and shrimp
- Natural color enhancing formula

# FISH CARE

Observation and daily verification of your pond fish is an important preventative measure. A quick daily check will reveal problems before they become serious.

Aside from a daily check on the health of your fish the main form of care you will be giving them is their daily feedings. In a pond where there is a good balance of plants, wildlife and fish there are plenty of natural foods, but in order to ensure that your fish are receiving a properly balanced diet feed them a good quality fish food.

## Disease Prevention

Most living organisms can suffer illness at one time or another. The most effective way to deal with this reality is to prevent, rather than wait for a possible problem or symptom. The consequences of having to treat a stocked pond with a medication can be stressful and damaging in itself. Many plants, fish and helpful bacteria can suffer as a result of using medication. Feeding a quality food and maintaining ideal water conditions will ensure fish health.

### Tips for disease prevention:

- Choose only healthy fish
- Purchase fish in limited groups, slowly build fish populations.
- Follow proper acclimation of new specimens.
- Always condition new water properly. Chlorine, chloramine, and metals are damaging to inhabitants. Use Laguna Water Prep.
- Perform basic water tests and maintenance on a regular basis.
- If a medication has been used, after the treatment is complete, perform additional water changes and use carbon to remove residual traces.
- Supply regular feedings with a high quality diet such as Laguna Goldfish and Koi foods.



# WINTERING YOUR POND

## Preparing your pond for the winter:

Use the following guidelines if you are not heating and/or aerating your pond to help determine if your fish should be brought inside for the winter:

- When the pond is less than 24" (61 cm) in more temperate areas such as gardening zone 7 or above
- When the pond is less than 42" - 48" (107-122 cm) in cold climates such as gardening zone 6 or below
- When the pond is a patio pond



As the water temperature of your pond falls, the fish will require less food. Watch their food intake and adjust your feeding. Stop feeding your fish completely when the water temperature of your pond reaches an average of 45 °F (7 °C). At 47-50 °F (8-10 °C) the fish will begin to hibernate at the bottom of the pond. Regardless of the outside temperature or if your fish come to the surface during the winter do not feed them. They are surfacing for oxygen not food. If you feed them during this period, the food will not be digested.

If your pond is not suitable to winter your fish you can bring them inside. They can be kept inside a tub or aquarium in your home. Because goldfish and koi are fish that create large amounts of waste, they require strong filtration to maintain a healthy environment. A basic rule of thumb is that goldfish require 3 gallons of water per inch of fish; koi need a minimum of 5 gallons (19 liters) per inch (2.5 cm) of fish. Buy a filter that moves at least twice the quantity of water in the tank (ex: 50 gallon tank = 100 gallon per hour filter). It is better to overfilter than underfilter. You may continue to feed your Laguna fish food, but reduce the amounts during the inside period to minimize waste production.

Bring enough pond water inside with your fish to fill at least 50% of the container. Treat the tap water with Laguna Water Prep. Note: add Laguna Bio Booster when you add your fish to the container. Fish will automatically begin producing waste and you need beneficial bacteria in your container to counteract it.

Perform a partial water change every week and make sure to treat your water with Laguna Water Prep. Watch the dosage - Laguna Pond products are concentrated for pond use. Add Laguna Bio Booster to the water weekly.

The more beneficial bacteria you have in the container, the less bad bacteria. Add Laguna Bio Sludge Control, while monitoring lighting and feeding, as too much light and food increases algae growth. Make sure to change filter carbon monthly.

With a little care and attention you'll be able to enjoy your fish during the winter months.

# RE-INTRODUCING YOUR FISH IN THE SPRING

Begin feeding the fish again when the average temperature of your pond is above 47 °F (8 °C). Use Laguna Premium Koi & Goldfish floating food sticks – spirulina and wheat germ, which is recommended for spring and fall when water temperature is above 47 °F (8 °C). In addition, this food is formulated with high grade spirulina and wheat germ which provides many health benefits for pond fish.

Fish that have been kept indoors for the winter will need time to adjust to the pond's environment. A sudden change in temperature and pH level can have an adverse affect. That is why it is important to allow them time to acclimatize gradually. Never "pour" or drop the fish in the pond. The first step is to net the fish as gently as possible and place them in a plastic bag for transportation. Once at the pond side, the bag should be untied and allowed to float on the pond's surface. Wait about 10 minutes, or until the temperature of the bag and the pond water are about equal, then add a small amount of pond water to the bag and leave for another 10 minutes. Repeat the process once or twice more, then add a capful of Laguna Water Prep before gently allowing the fish to swim out of the bag and into the pond.

If the fish have wintered in the pond, do not start feeding them until they are active and/or the pond temperature has reached approximately 47 °F (8 °C).

## **Watch your fish carefully for a few days**

Moving can have a traumatic effect on fish, so watch them carefully to ensure that they are adjusting to their new surroundings and that there are no losses. Use pond test kits to take ammonia and nitrite readings regularly to ensure that the biological filter is establishing rapidly and effectively.



# Feeding Tips:

- Measure pond temperature with a thermometer (PT945) during the spring and fall seasons to ensure that the correct food and feeding frequencies are being followed.
- At water temperatures of 50 °F (10 °C) or above, feed fish up to four times daily, but only as much as they can consume in two minutes.
- When water temperatures drop below 45 °F (7 °C), pond fish require no food.
- When going on vacation, pre-measure daily feedings for the person who will be feeding in your absence. This will help prevent over or under feeding of pond fish.
- Provide two types of food formulations. Ideally Spirulina should always be provided.
- When feeding, make sure not to get any moisture into the container and always properly seal the lid. Do not leave the food container in the sun. Store it indoors, in a cool, dry place.
- If fish do not feed and the water temperature is not the reason, make sure to test for ammonia and nitrite and look for any signs of disease.
- When feeding a Color Enhancing food, make sure it uses natural color enhancing ingredients.



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