



WATER
GARDENING
SERIES

www.TsugawaNursery.com
410 E Scott Ave, Woodland, WA 98674 (360) 225-8750

Check us out on
Facebook.com/TsugawaNursery



Fish for Your Garden Pond

PREPARATION—The Pond:

Before introducing fish to your pond, you'll want to establish a suitable environment for them.

1. Allow the newly added pond water to stand at least 24 hours so it can reach air temperature.
2. Circulate at least one half the volume of water per hour. (e.g., 500 gal pond = 250 gph pump).
3. If you are using tap water, treat with a dechlorinating agent.
4. Take a pH reading; plants and fish will do well in a range from 6.8 to 7.6.
5. Plant your aquatic plants in your pool, including submerged plants. Wait 1 week for the pond water to cure. Algae may flourish, but don't worry, it will clear up once the plants start growing, simply rake out any clumps of algae. Take another pH reading to be sure your mini ecosystem is in balance.
6. When the pH is stable in the 6.8 to 7.6 range, your pond is ready for fish.
7. It is important to keep a level of salt in the water to improve the electrolyte action of the fish. The level is 1 cup of sea salt or solar salt to each 100 gallons of water. This will not harm plants or aquatic creatures.
8. Bacteria will not colonize biological your filter until fish are present: fish waste gives the microorganisms their needed nutrients. If you are using a biological filter, introduce fish very slowly, a few per week, so your filter doesn't become overloaded. The start up process may take two weeks from your initial fish introduction. Be sure to add beneficial bacteria according to label directions.
9. To avoid overcrowding, allow 10" of fish for every 100 gallons of water.

PURCHASING—How to Choose Your Fish

1. Make sure the water is clean and clear and smells fresh. The fish should have clear colors and smell fresh too.
2. There should be fish held in quarantine: this means that your fish has been on the premises long enough that any diseases should have shown up long before the fish went into the sale tank.
3. Feeder goldfish and snails should be in separate tanks from the other fish because they tend to carry diseases.
4. Watch how the dealer handles the fish. Does he tub them or net them directly out of the water? With small fish, netting may be the only practical method. Large fish should be net trapped, then lifted by hand into a tub that is then taken from the tank. Tubbing puts a lot less stress on the fish as well as being much safer because the scales, fins, gills, and mouth are not damaged as they frequently are with nets.
5. When the fish you've chosen is in the tub, inspect it for overall health:
 - Look for fuzzy or white patches anywhere on the body, fins, gills, or mouth
 - Check fin tips for color or ragged appearance
 - Check for sores or lumps; be sure to check the underside of the fish
 - Gills should be a rich, deep pink

(continued on reverse side)



TRANSPORTING—Getting the Fish from Here to There

1. The fish should be in bags where there is enough room and water for the fish to move about.
2. The fish should be bagged in a heavy-duty fish bag.
3. Water in the bag should be from the tank the fish was living in.
4. Oxygen is more important to your fish than water, so there should be more oxygen than water in the bag. This is especially important when the trip home is going to take more than an hour. As long as the water completely covers the fish, there is enough water in the bag.
5. The bag should be twisted closed and secured with a rubber band.
6. Your fish will travel better if the bag is placed in a box for both stability and so the movement around them won't startle the fish. If the trip home is going to take more than 8 hours, or if it's hot outside, your fish should be double boxed, with an ice pack between the boxes, to help keep the fish cool. The cooler temperature allows the fish to stay calm, so it uses less oxygen and energy and produces fewer toxins into the small amount of water the fish is in.
7. Gently place the box onto the floor of the car; making sure it is propped and held up so it won't tip. Do not drop the box; the shock is extremely detrimental to your fish.

INTRODUCING FISH INTO YOUR POND

1. Float the unopened bag on your pond's surface for 15-20 minutes to equalize the water temperature in the bag with the water of the pond. On very sunny days, cover the bag with a towel to prevent the bag from overheating and your fish getting sunburn.
2. Open the bag and roll down the sides. The air trapped when you do this creates a floating ring that supports the bags' weight. Remove a small amount of water from the bag and throw it away; do not add this bagged water to your pond. Add a matching amount of your pond's water to the bag.
3. Repeat this water exchange 4 or 5 times with about 5 minutes between changes. This gradually acclimatizes the fish to the water in your pond, avoiding the sudden changes in pH and other water quality factors that would shock your fish.
4. Release your fish simply by pressing down the edge of the bag; allowing your fish you fish to swim off. You may wish to tightly cover your pond for the first 48 hours so that your newest acquisitions won't jump out.

QUARANTINE—Recommended But Not Absolutely Necessary

All fish, plants and other aquatic life has parasites, bacteria, and other pathogens that they live with constantly, just as you constantly have cold germs. Just as you don't get a cold until there's a physical or emotional stress, fish don't become overwhelmed by their pathogens until they are stressed. Introducing even healthy fish into a new environment can be stressful. Add to that the fact that your new fish may come into a new "bug," and it's no wonder so many fish get sick within a short time of their introduction to a new pond. Quarantining you new fish for a period not only helps protect your new fish from bugs your older fish have, it also helps protect your older fish from a bug your new one has.

Quarantine containers do not have to be extravagant. A child's wading pool with a net cover will usually suffice. Water quality requirements are still the same as they were in the pond though, so you'll need a filter set up. Be sure the quarantine container is shaded; because it's smaller than your pond it will heat up faster. If you are planning to introduce a lot of fish to a large pond in one season, you may want to make your tank a semi-permanent set up.

Follow the introduction techniques outlined above when you add fish to your container. Watch your fish for any problems and treat appropriately; plan on a general parasite treatment just as a precaution. Feed your quarantined fish just as you do the fish in your pond; if they are stressed you may coax them to eat with a favorite food like chopped up bits of earthworms.

(continued on next page)

COMMON POND FISH

Goldfish are the easiest of the hardy fish to care for; they can live up to 6-12 years and in large ponds can get 10-12 inches long. They breed rapidly and are hardy in even cold winter areas. Varieties include common goldfish, shubunkin, comets, and sarasa comets.

Koi are the largest ornamental pond fish. Although reputedly they can live two hundred years, forty to sixty years is much more common. Koi require at least 24 inches of water depth and biological filtration to keep the water clean and healthy for them. Most Koi are bred in Japan, although they could be from just about anywhere. The United States, Israel, China, and Indonesia all produce large quantities of Koi each year.

FOOD

Your fish are hearty eaters; however, their appetites will depend on the water temperature. Feeding schedules and food types vary. At 80 to 85 degrees Koi need feeding two times a day, with a high protein food. From 50 to 55 degrees they like a one time a week, low protein, easily digestible wheat germ food. As fall approaches, the air will be cooler than the water, so it is important to feed your fish according to the water's temperature, not the air. In winter the water temperature under degrees it is not necessary to feed your fish, they go dormant, living off fat they put on during the summer.

Also, don't feed your fish in summer if the water temperature goes above 85 degrees, toxins could build up. Koi are primarily vegetarian and may eat your plants. To reduce the damage, give them fresh spinach (never frozen or cooked). Chop the fresh leaves into tiny bite sized pieces and mix with the food you normally give them. When Koi get their greens, they'll be more inclined to leave your plants alone.