



Guide to Caring for FRESHWATER FISH



Caring for aquarium fish can be rewarding and a lot of fun but it's a big responsibility. Fish are not simple creatures to look after; they do not show their feelings clearly, have specific needs and require a lot of attention and routine care. If you own or are responsible for pet fish, you are required to care for them properly.

Fish can be challenging pets; meeting their complex biological, environmental and behavioural needs takes a great deal of preparation, investment, time and care. This basic guide is concerned with freshwater fish.

INTRODUCTION

Goldfish

A common misconception with goldfish is the age they can reach - many think of goldfish as living for a short time. The fact is they are known to live for as long as 25 years! Common goldfish are the hardiest as they have not been weakened by selective breeding.

There are also many 'fancy' varieties of goldfish which are more delicate because selective breeding has made them prone to inherited health problems. We believe that breeding for exaggerated physical features is unjustifiable, due to the negative impact on welfare, so we discourage the keeping of such fish.

Tropical Fish

'Tropical fish' come from warm climates of the world. You can get specially bred varieties of tropical fish but just like with goldfish, body modifications can have negative impacts on their welfare, such as with the 'rose-tailed' betta fish which have very heavy tails that can cause health problems.

The term 'tropical freshwater fish' includes:

African fish: including the rift-valley cichlids, Congo tetras and the African killifish

South American fish: including the corydoras catfish, many types of tetras, live bearing fish (such as mollies) and angelfish

South East-Asian fish: including rasboras, barbs and labyrinth fishes (including bettas and gouramis).

Sourcing Fish

If you want pet fish that will reward you for years to come, we recommend going to a rehoming centre or reputable aquatics retailer who will give you the correct advice to ensure your fish are healthy. Be sure to only purchase your fish from shops with healthy animals.

As with other exotic pets, we are opposed to the transport of wild caught fish or farmed fish over long distances due to the welfare issues involved, so ask your retailer about the sources of their fish.

We do not condone the winning of fish as prizes. Sadly, it is not illegal to for anyone to give animals away as prizes. The fish can die due to suffocation or temperature changes; winners do not normally have an aquarium set up so may keep them in unsuitable environments and some fish even get illegally dumped in local waterways. We suggest you boycott any events where fish are given away as prizes.

Ponds

We discourage the release of fish outdoors due to the harm they can cause to wildlife by disease spread and predation. Instead, we encourage you to let wildlife colonise ponds naturally.

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ENVIRONMENT

Introduction to Setting up an Aquarium

In fish keeping, the most important thing to remember is that by creating a clean, stable environment, your fish are more likely to be healthy.

Position

Position your aquarium away from heat sources like radiators and make sure it is on a sturdy surface. Consider pollutants in the air - cigarette smoke or aerosol sprays can be toxic to fish so this might be a factor when deciding where to locate your tank.

Aquarium Shape

We do not recommend 'decorative' tanks, such as goldfish bowls. This is because they are designed for aesthetics, rather than animal welfare so they are inadequate as homes for animals.

The surface area of the tank is vital because this is where oxygen (O₂) diffuses into the water. Wide tanks are better than tall tanks as they have a larger surface area for the water volume.

Also add aeration equipment, which agitates the surface of the aquarium, to increase gas exchange and so increase the amount of O₂ in the water.

Temperature

Goldfish need to be kept within 10 to 21°C, so a heater is not normally necessary. However, if you are concerned about temperature swings, you could include a heater, set at the lower limit of the range.

With most other fish, you must include a tank heater and set it to the correct temperature for the species. For example, guppies can tolerate 22 to 28°C, whilst loaches need to be kept between 18 and 26°C. You must research the temperature requirements of the fish species you want to keep.

All heaters must be controlled by a thermostat. Fish tank heaters are available with built-in thermostats. Just as with any electrical equipment, thermostats and heaters can fail, so use a digital thermometer and check the temperature every day.

Lighting

Artificial lighting is recommended to provide the fish with normal day/night behaviour patterns. A light cycle of 8 to 10 hours light a day, switched off at night, is suitable for most species. Do not place the tank by a window as this can raise the water temperature dangerously high.

Aquarium Size

The simple equation for working out the volume of a fish tank is to multiply length by width by water depth (the height of the tank up to the water line) in centimetres and divide the result by 1000 to get the volume in litres. You should then take off around 10% to account for the displacement of water by the substrate and decorations.

Always aim to provide more than the minimum required - bigger is better because larger volumes have more stable temperatures and water conditions. For this reason, we recommend that you only get a tank larger than 45 x 30 x 30cm (about 40 litres).

Bear in mind the capacity for the size of fish you want to keep. Too many fish in a tank will pollute the water which can lead to disease and death of your fish. Also, good O₂ exchange is essential and with too many of fish in the tank, there will not be enough O₂.

There are guidelines for the volume of water to be allowed per length of fish. For example, for tropical fish:

Allow 1½ to 2 litres of water per 1cm of tropical fish length' (excluding their tails).

Goldfish require more space, so:

Allow 2 litres of water per 0.5cm of goldfish length.

However, these should only be used as guidelines and not relied upon because water quality is affected by many factors, including temperature, water source, filtration power, how well you tend to the tank and more.

Filtration

Water quality is the most important aspect of fish keeping. The RSPCA believes that no fish should be kept in tanks without a well set-up and maintained filter.

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Mechanical filtration is where particles are trapped so they can be removed. Biological filtration is more complex. Fish release ammonia into the water which is toxic to them so must be dealt with. A working biological filter allows beneficial bacteria to grow, which break down waste naturally. Ammonia is converted to nitrite, which is also toxic, and then eventually to nitrate, which is safer. However, in high levels, nitrate can also cause problems for fish. This is why you need to carry out weekly water changes to dilute the waste products your biological filter cannot break down.

Water Changes

Leaving the fish in the tank, remove 10% of the water with a siphon. It is vital that the filter sponge/media is then swished in the aquarium water you have removed. This clears the sponge of solids. Never wash it under the tap as you will kill the beneficial bacteria.

You must also keep the filter parts clean so that the filter runs smoothly and efficiently. This includes removing and cleaning the impeller.

Chlorine present in tap water is dangerous to both fish and bacteria. As such, it is vital to add a dechlorinating product to the new water or leave it standing for 24 hours for the chlorine to leave the water.

When refilling the tank, you don't want the new water to be a different temperature to that in the tank as this will shock the fish. It is a good idea to get a separate fish tank heater to heat the water before you add it.



You cannot determine the quality of the water properly just by looking at it – clear water does not always mean healthy water. Instead, you will need to get testing kits and check the water quality at least monthly. Kits for ammonia and nitrite are essential - not optional extras.

The safe levels of these are:

- 0mg/L of ammonia
- 0mg/L of nitrite

If your tests show that the waste levels are higher than this, you will need to change half of the water every day and keep testing until conditions improve. If the chemical waste levels do not decrease over time then you will need to make steps to improve the water quality. Ask your aquatics shop for help with this.

Cycling a New Fish Tank

Fish tanks take time to establish because you need bacterial colonies to grow in the filtration system.

The RSPCA strongly advises that new owners use 'fishless cycling' when starting up an aquarium. This involves running the tank filter for some time before adding any fish. At the beginning, you will need to 'seed' the tank with a product to kick-start the growth of bacteria that are essential for keeping your water clean and suitable for fish once they arrive. Alternatively, you can use some filter media from a mature tank (as long as it is disease free) and add that to your filter.

During cycling, you should test your water every other day. Only add fish when there has been a spike in the levels of ammonia and nitrite, followed by a return to 0.

There is no exact rule for how long cycling will take but it will be at least two weeks. Reputable retailers will ask that you bring in a water sample so they can test it to see if the tank is ready to add fish.

Fishless cycling prevents fish coming to harm from the spike of ammonia or nitrite. Fishless cycling also takes time, which is great because it allows you to practice maintaining your tank without bothering any fish.

USEFUL WEBSITES

www.bigfishcampaign.org

www.practicalfishkeeping.co.uk

www.ornamentalfish.org

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DIET

Feeding

Feed only as much as the fish can eat within 2 to 5 minutes. If uneaten food is left to rot it will pollute the water. If you are not sure, then start with a small amount and then add a little more if they still seem hungry.

Always make sure you buy the right type of food for your fish – don't feed tropical fish flakes to goldfish and *vice versa*. Goldfish require a plant-based diet, whilst tropical fish need more protein (depending on species).

Different fish species will need their food presented differently. Bottom-dwelling species such as catfish will need their food to be of the sinking type whereas surface feeders such as hatchet fish will need floating food. Nocturnal species, like some catfish, need to be fed in the evening.

A Well Balanced Diet

It is important to supplement fish food flakes with other foods for balanced nutrition and enrichment.

Goldfish welcome chopped vegetable matter like lettuce or spinach. They will also nibble on aquatic plants.

Tropical fish vary in what they will take – try crumbled boiled egg yolk and lettuce, depending on the species

Livebearers (including guppies and mollies) especially appreciate green matter.

Invertebrate foods are an excellent supplement for tropical fish and are widely available frozen. Suitable foods include daphnia and brine shrimp.



Transporting Fish

When the fish are being prepared for transport, make sure there is more air in the bag than water and that the fish are not overcrowded. If the weather is cold, don't hesitate to ask the shop to wrap the bags in paper to help prevent sharp temperature drops. Take the fastest route home to minimise transport and packaged time.

Be careful when buying livefood packs as they can introduce disease to your tank. Only feed small amounts to goldfish due to their high protein quantity. Strain these foods through a fine mesh fish net before feeding otherwise you will pollute the water.

Holiday Care

It is important that whoever feeds your fish in your absence avoids over-feeding. It is a good idea to pre-pack meals for each feed.

It is in fact better to underfeed rather than overfeed because the risk of poor water quality is more dangerous than a lack of food.

Do not use the 'holiday blocks' available from pet shops as they dump a lot of food into the water all at once. An automatic feeder will release a measured amount of food each day. However, a responsible person still needs to check the fish to ensure that the fish are ok and that the equipment is running properly.

BEHAVIOUR

Non-conformists: fish that dwell at any depth and do not need to be kept with others of the same species e.g. guppies, swordtails and mollies.

Surface feeders: dwell just below the surface. Have straight backs and upturned mouths. These include danios, Siamese fighting fish (bettas) and hatchet fish.

Midwater feeders: have small mouths at the front of their face e.g. angelfish, harlequin rasbora, glass catfish and pearl gourami.

Bottom dwellers: flat bodies and downward facing mouths e.g. bronze catfish, pleco and clown loach.

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Substrate

The substrate needs to be suitable so as not to cause injury. Don't be tempted to use substrates such as horticultural gravels, which have sharp edges. Think about their behaviour - catfishes like to root around in the substrate so will need very fine gravel with smooth edges. For goldfish, you can use gravel, which is easier to clean and the goldfish will not be able to swallow it if the particles are large enough. Make sure substrates are rinsed thoroughly before use with clean water.

Alternatively, you can use soil substrates. These are useful for growing plants but they are more specialist.

Plants

It is important to provide opportunities for natural behaviour in captivity, called 'enrichment'. Plants provide shelter, hiding places and shade for all fish and a food source for some fish. They also add oxygen to the water. However, plants also consume oxygen at night, when fish and bacteria need it.

Shelter

Secure branches, rocks or artificial decorations should be used to provide shelter. Many species of catfishes need hides otherwise they will feel stressed. You must only use wood and rocks from aquatics shops or pet shops as wood collected outside is not safe for fish.

Avoid Overcrowding

The number of fish you can keep in your tank is determined principally by how well you can maintain water quality but also by the behaviour of the fish. You need to make sure there is lots of space for fish to get away from one another and enough hiding places for all individuals at any one time.



Settling in your Fish

When introducing the fish to your aquarium, turn off the lights and leave the bag in the water for half an hour to allow the water in the bag to come to temperature. Then use a net to transfer the new fish to your tank and throw away the water from the bag. Keep the tank lights off for the rest of the day so that the fish can rest and explore in their own time. The following morning, you can turn on the lights and check on your fish.

However, when keeping some cichlids, you might need to have a more crowded tank to prevent fighting. This requires careful maintenance.

If you want to mix species and create a 'community tank', it is best to choose species that live at varying depths of the aquarium, to maximise available space.

COMPANY

Goldfish

Goldfish do not need to be kept in shoals, so can be kept in a pair or groups. Despite being a single species, there are many varieties of goldfish. Short, stubby-bodied fish with flowing fins and twin tails are slow moving and not found in nature. Slim-bodied, single-finned fish are faster, more able swimmers and generally hardier. Twin- and single-tailed varieties should not be kept together as you will find the twin-tailed fish will miss out on food.

Tropical Fish

Many tropical fish, including danios, tetras, rainbowfish, rasboras and many catfishes are 'shoaling fish'. This means that you must keep them in groups of six or more, otherwise they may feel stressed. Keeping them in groups means they will be more relaxed and so will come out from hiding more readily.

Others are not very social and will fight with either their own kind (e.g. male betta fish) or individuals of other species (e.g. boisterous cichlids like Jack Dempsey). Large fish such as oscars may try to catch and eat smaller fish. It is important that you research the species to find out about their compatibility with others.

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HEALTH & WELFARE

Signs of Healthy Fish

Appetite: food eaten enthusiastically.

Breathing: gills should rise and fall rhythmically.

Demeanour: active, alert and showing normal behaviour for the species.

Eyes: bright and clear.

Fins: should be intact and should not be drooping. Watch out for splits, spots or tears.

Position: swimming freely and evenly - a fish either sinking to the bottom or swimming to one their side is a bad sign (some catfish do swim upside-down though!).

Scales: smooth, showing no injuries or fungal growth.

Vent: clean, without stringy faeces.

Diseases & Concerns

Signs of poor health include sunken or distended bellies (except when carrying eggs); sticking out scales; pale patches on scales; tiny white spots; milky eyes and irregular position. Do not buy fish from shops that have any of these signs, even some fish appear healthy, as the tanks are usually part of shared water systems.



Oxygen starvation: Continuous gulping at the water surface (except labyrinth species such as bettas) is due to low O₂ levels, or the result of poor water quality - nitrite poisoning or ammonia irritating the gills.

Fungus disease (saprolegnia): Body and fins covered in white tufts.

White spot (Ichthyophthirius parasite): Tiny, abnormal white spots covering body and fins. This can be treated with special medication if caught early. If not treated then it will spread quickly and can kill fish.

Fin rot: Wasting of the fin tissue (different to accidental tears which will heal provided the water quality is good).

Dropsy: Bloated body and protruding scales.

Swim bladder: Loss of balance leading to inability to swim properly. There could be many possible causes and treatment should be based on identifying these.

Temperature stress: If the water becomes too cold, tropical fish are known to swim slowly. If too hot, the O₂ levels will decrease, so the fish will gasp at the surface.

Most of these conditions are triggered by stress due to poor water quality so if your fish get any disease, check your water first for peaks in ammonia, nitrite or nitrate. If you are not sure, consult your specialist fish vet.

What Next?

It is essential that you research the care requirements of fish before deciding to keep them. Also consider who will be able to care for the fish if you are away, how long they will live, how large they will grow and if you are prepared to invest in what is necessary to care for them.

It is strongly recommended that you continue to read up on fish keeping. There are sure to be books in your local library and you can try one of the good fish keeping magazines. Another source of information is your reputable aquatics shop. Be cautious when looking up information on the internet, as it can be unreliable.

Photos: Josh More, Mely Melv, Lauris Karpovis, Jason Sutcliffe, © M. Agullo/Flickr

This care sheet is a basic guide only. Further information must be sought before you decide to take responsibility for any exotic pet. Find more information on our website:

www.rspca.org.uk/fish