Tropical Freshwater Invertebrates
How to care for crayfish & freshwater crabs

Crayfish and freshwater crabs are interesting aquarium inhabitants, but they require a special set-up to be able to thrive properly. Most species originate from Asia, but many of those in the trade are captive bred. Although crayfish and freshwater crabs make good aquarium inhabitants, they should be mixed with caution as they may eat other common aquarium species.

Water requirements

Crayfish and freshwater crabs are usually undemanding of water chemistry and their suggested parameters are shown below. The parameters are a general guide for this group, so it is important to check with your OATA retailer for any species-specific requirements before purchasing.

Salinity:	Speak to your OATA retailer
Temperature:	between 22-27°C
pH:	7.0-8.0
Ammonia:	Zero mg per litre
Nitrite:	Zero mg per litre
Nitrate:	Not to exceed 20 mg per litre above normal tap water levels
General hardness:	Medium-hard (8-18°dH)
Carbonate hardness:	Medium-hard (10-15°dkH)

Biology

Only one species of crayfish is allowed to be traded in England and Wales, namely the red-clawed crayfish, which is sometimes known as the blue lobster. No crayfish can be traded in Scotland. The species name for both is *Cherax quadricarinatus*. There are several species of crab which are found in the trade and these include vampire (*Geosesarma* species), red-clawed (*Perisesarma bidens*) and panther (*Parathelphusa pantherine*) crabs.

Some of these species are fully aquatic and will live submerged for their entire life, whereas others will need an area above the water line to forage and hide. In addition, some species are naturally found in estuarine conditions and so may need a small amount of salt added to their water. Crayfish and freshwater crabs vary in lifespan with some of the smaller crabs only living for a couple of years, but the red-clawed crayfish can live for many years in a well-matured set-up with good water quality.

As they are invertebrates, both crayfish and freshwater crabs are very sensitive to copper and will die if exposed even to low levels. Always ensure any treatments added to the aquarium are safe for invertebrates.

Crayfish are not social and should be kept alone unless kept in a very large aquarium with lots of hiding places. Some crab species are social and should be kept in groups of at least five in the home aquarium. Those which are kept singly or in groups that are too small will often become stressed. Some species may need more females than males, so always consult your OATA retailer. Other species, such as rainbow crabs (*Cardisoma armatum*), can be aggressive towards each other and should be kept alone. It is easy to identify the sex of both crayfish and freshwater crabs. Mature male crayfish will have bright red claws and crabs can easily be sexed by the shape of their "tail" which is tucked under the body: males have a pointed tail, whilst the female's tail is wider. Crayfish and freshwater crabs frequently moult, so do not be surprised if you see a 'skin' resembling that of a dead individual in your aquarium.

Aquarium requirements

As a general rule, you should within reason, buy an aquarium as large as possible. It is recommended that an aquarium of at least 60 litres is used for a small group of freshwater crabs. The red-clawed crayfish will need a larger aquarium of at least 200 litres for one individual. Aquariums for crayfish and freshwater crabs should be as long and wide as possible to provide adequate floor space. The larger the aquarium, the more stable the environmental conditions such as temperature and water quality will be. Whatever the size, **a filter is always essential**.

Red-clawed crayfish will need an aquarium similar to that for fish, but will also require fine gravel or sand to excavate. It will require plenty of shaded caves or crevices in which to hide. These can be made with rocks, wood or ornaments. Live plants are likely to be uprooted or eaten, so only artificial plants are recommended. A cover is advised since they may dart or jump about when threatened.

Freshwater crabs will require quite a unique set-up. Many species need an area of 'land' on which to bask and it is recommended that the aquarium only contains a half or third of the full volume of water. Rocks, large pebbles and gravel should be sloped to create an area of land which the crabs can access. This should then be covered in sand with live plants, roots and caves to allow crabs to behave naturally. A secure lid should also be fitted and any holes blocked since freshwater crabs are very good as escaping.

For some species, a heater is required to maintain a suitable temperature all year round. To minimise fluctuations in water temperature, the aquarium should not be situated near any draughts or heat sources. It should also be out of direct sunlight and away

from loud noises, vibrations and sudden movements. Overhead tank lighting is recommended to maintain a correct day-night cycle.

Water testing kits are essential so that water quality can be checked on a regular basis (once a week) to ensure it does not slip below the water requirements stated earlier.

Introducing your crayfish or freshwater crab

Before adding any crayfish or freshwater crab, seek advice from your OATA retailer to make sure that your aquarium is an appropriate size for the species you would like to keep. Check that the water quality in your aquarium is suitable i.e. levels of ammonia and nitrite are zero. Only increase the number of crayfish or freshwater crabs you have in your aquarium slowly, as the population of beneficial bacteria established when maturing your aquarium filter need to increase every time more livestock are added and feeding increases. Overstocking or stocking your aquarium too quickly can result in 'new tank syndrome'. This occurs when there are not enough nitrifying bacteria to cope with the increased waste from the inhabitants, leading to unhealthy levels of ammonia and nitrite, which may cause crayfish or freshwater crabs to become ill or die.

Your OATA retailer will usually sell your crayfish or freshwater crabs to you in a plastic bag or container. Try to avoid keeping them in this for too long. Once purchased, take your new livestock home as quickly as possible because they are easily stressed by bright lights, extreme temperatures, noise and movement.

Once home, your crayfish or freshwater crabs will need to acclimatise to their new environment and a common method of doing this is known as the 'floating bag' method. Switch off the aquarium lights and take the bag containing your new livestock out of its outer wrappings carefully, avoiding exposure to bright light. Float the bag in the water of your tank to ensure the temperature in the bag is the same as the aquarium water. After 10 minutes, slowly introduce small amounts of aquarium water into the bag containing the crayfish or freshwater crabs for at least 30 minutes. Once complete, carefully release the crayfish or freshwater crabs whilst introducing as little bag water into the aquarium as possible. After this, dispose of the bag and any excess water appropriately. It is important to take your time during this process as invertebrates are prone to shock from sudden changes in water chemistry. Monitor your new crayfish or freshwater crabs carefully for the first week, paying particular attention to water quality. If in doubt, contact your OATA retailer for advice.

Maintenance

At least once every week, a partial water change of 25% is strongly recommended (a siphon device is useful to remove solid waste from the gravel). The water should be tested regularly (at least once per week) to ensure that ammonia and nitrites don't build

up. Ensure that the replacement water is treated with tap water conditioner to remove any harmful chlorine or chloramine present before adding to the aquarium.

Filters should be checked for blockages. If the filter needs cleaning, do not run it under the tap because any chlorine or chloramine present may kill the beneficial bacterial population that has established in the media. Instead, it should be rinsed lightly in the tank water which is removed during a partial water change as this reduces the amount of bacteria which are lost.

Good husbandry is essential as crayfish and freshwater crabs can be stressed by even the smallest amounts of ammonia and nitrite which may then cause them to develop various diseases. Test the water to monitor the ammonia, nitrite and nitrate levels, together with pH and water hardness every week, especially during initial set-up and after adding extra livestock.

What to watch out for

All animals will have slight variations in their behaviour or appearance, but keeping an eye on any changes in the following will help to identify any potential problems before they become a real health issue:

- behaviour – lethargic, hanging out in the open, sitting on the bottom or erratic movements
- colour – turning a darker or paler colour than normal
- temperament – changes in level of aggression or hiding more than normal
- appearance – development of white spots or fluffy growths, loss of body parts
- condition – increase or decrease in body weight and condition
- feeding – reduced intake or lack of interest in food

If you are concerned about the health of any of your livestock, then test your water quality and contact your OATA retailer for further guidance.

Feeding

Crayfish and freshwater crabs are both omnivorous scavengers and will eat most food items offered. Meaty frozen items such as mysis, prawns or krill should be offered to crabs, but crayfish might need larger items such as lancefish as they grow in size. Both will eat plants and should be offered courgette, cucumber and lettuce. Both may also take sinking crustacean pellets, algae wafers and dried algae.

Crayfish and freshwater crabs should only be fed once a day. They will need time to eat and any food should be left for at about 30 minutes to allow them to feed. Take care not to overfeed as this can lead to a build-up of uneaten food which breaks down releasing toxic waste into the water. If in doubt, ask your OATA retailer for advice on appropriate feeding levels.

Compatibility

Although crayfish and freshwater crabs are scavengers, they are opportunistic and will hunt small and slow-swimming fish. It is therefore recommended that they are not mixed with fish and best kept in a dedicated set up.

Breeding

The success of breeding of crayfish and freshwater crabs varies greatly. Red-clawed crayfish have been bred in the home aquarium and after fertilisation, the female can produce hundreds of miniature shrimp-like larvae. However, this must be carried out carefully due to the territorial nature of the adults. Some freshwater crabs will breed in a similar way, however other species have complex larval cycles with planktonic stages which cannot easily be replicated in the home aquarium.

Checklist

Before purchase make sure:

1. You have the appropriate equipment and position for the aquarium.
2. You have researched all the species in which you are interested and your final choices are all compatible.
3. You are familiar with how to transport and release your fish.
4. You are aware of the daily, weekly and monthly maintenance your aquarium will require.
5. You are prepared to look after your fish properly for the duration of their life.

Shopping List

- Glass or acrylic aquarium
- Filter*
- Heater
- Lighting (required for live plants)*
- Gravel or sand
- Tap water conditioner/dechlorinator
- Water testing kits (ideally ammonia, nitrite, nitrate, pH and water hardness)
- Gravel cleaner/siphon cleaning device (recommended)
- Aquarium decorations and/or live plants
- Bucket for water changes

*may be included in branded aquarium sets but can be purchased separately.

Before purchase make sure:

- The aquarium is of a suitable size that ideally can accommodate the fish once they are fully grown
- Water parameters are as advised in this leaflet.
- Aquarium is cycled and ready to receive fish.

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Always buy...
test kits and regularly check the water for ammonia, nitrite, nitrate and pH. This will allow you to make sure the water in your aquarium is not causing welfare problems for your crayfish and crabs.

Maintain...
the water in the aquarium within the accepted parameters highlighted above. You may need to do regular water changes to achieve this.

Never siphon by mouth...
A fish tank can harbour bacteria which can be harmful if swallowed. Buy a specially designed aquarium gravel cleaner which can be started or primed without the need to place the siphon in your mouth

Establish a routine...
for testing the water in your aquarium. Record your results to enable you to identify fluctuations quickly. Also check the temperature of the water.

Always wash your hands...
making sure to rinse off all soap residues, before putting them into your aquarium, or use long sleeved rubber gloves. Wash your hands again afterwards and certainly before eating, drinking or smoking.

Five Welfare Needs Checklist:

The Animal Welfare Act 2006 states that all pet owners have a legal duty of care to their pets. Anyone who is cruel to an animal or is found not to be providing the five animal welfare needs, as listed below, can be prosecuted.

- A **suitable environment** e.g. appropriately sized tank (with water heater if tropical set up) within a suitable location in your home.
- A **suitable diet** which meets the needs of your chosen fish.
- **Behaviour** - Fish are able to exhibit their normal behaviour e.g. hiding places for timid fish, enough room for fish to swim freely.
- **Companionship** - Ensure you know whether your chosen fish need to be kept with, or apart from, other fish.
- **Health** - Protected from pain, injury, suffering & disease e.g. you are aware of the daily, weekly and monthly maintenance that your aquarium will need.

- **Water quality test kits are a necessity not an optional extra.**
- **You must be prepared to look after your fish properly for the duration of their life and provide an aquarium which can accommodate your fish when fully grown.**

*Never release your aquarium animals or plants into the wild
It is illegal and for most fish species this will lead to an untimely and possibly lingering death. Any animals or plants that do survive might be harmful to our native countryside. Take care to properly dispose of any soiled substrate (e.g. sand or gravel) or decorations so that non-native organisms do not enter natural watercourses.

Visit ornamentalfish.org to find a full range of how to guides and species-specific care sheets to help you look after your fish successfully.

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