

Tropical Marine Invertebrates

How to care for anemones

Anemones are popular with aquarists due to their bright colours and the relationship some species form with clownfish. They come in various sizes and colours. Anemones can have specific requirements and are best kept by more experienced aquarists. Always consult your OATA retailer before purchasing any anemone to ensure you can meet its requirements.



Water requirements

The water chemistry requirements to keep anemones are shown below. These 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. Please also note that if keeping anemones with other species, some parameters will need to be altered to accommodate more sensitive species.

Salinity:	Between 1.023-1.026
Temperature:	Between 24-26°C
pH:	8.1-8.3
Ammonia:	Zero mg per litre
Nitrite:	Zero mg per litre
Nitrate:	Not to exceed 40 mg per litre
Carbonate hardness:	Hard (8-12°dkH)
Calcium:	Between 380-450 ppm
Magnesium:	Between 1250-1350 ppm
Phosphate:	Not to exceed 0.05 mg per litre

Biology

Although anemones are closely related to corals, there are distinct differences between the two. The main differences are the mobility of anemones (they are not sessile like corals), they have one polyp, and they do not produce a calcium carbonate skeleton like some species of corals. There are many different species of anemones. Popular species include bubbletip (*Entacmaea quadricolor*), carpet (*Stichodactyla haddoni*) and rock flower (*Epicystis crucifer*). Anemones vary in size, with flower anemones unlikely to grow over 20cm, whereas carpet anemones can grow over 60cm. Anemones generate their nutrition through photosynthesis and by predation. Photosynthesis is achieved through algae called zooxanthellae which live inside the anemone. They can capture animals that swim too close by stinging and catching them before taking them into their mouth for digestion.



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Anemones famously form symbiotic relationships with clownfish. This can be replicated in aquariums and has helped to drive the popularity of anemones. Different species of anemones will have specific relationships with certain species of clownfish and should be mixed carefully. Ask your OATA retailer for advice. Anemones can move freely around the aquarium using their foot, which can form a strong bond onto rocks and glass. Anemones will move frequently when stressed, so investigate any issues if your anemone is constantly moving. Since anemones are invertebrates, copper is toxic to them and care should be taken when using treatments in the aquarium or introducing fish from retailers that use copper in their systems. Anemones do sting and some species may affect humans. Please read our [Hazardous Aquatic Animals](#) guidance so that you are aware of what actions to take should you or anyone else be harmed by these species. It is best practice to have a sign on the front or lid of the aquarium, warning people what hazardous species are in the aquarium and the risks they pose.

Aquarium requirements

Since anemones are static, unless changing location, they do not have a minimum tank size requirement to allow for activity. As a general rule, you should within reason, buy an aquarium as large as possible. It is recommended that an aquarium of at least 80 litres is used for keeping most anemones, as sizes smaller than this may experience rapid changes in water chemistry. Large species, such as carpet anemones, will need larger aquariums, so ask your OATA retailer for advice. Whatever the size, **a filter is essential**. For marine set-ups this can be in the form of live rock with sufficient water flow, an internal or external filter, or a sump-based filter. A protein skimmer can also be beneficial for maintaining water quality as it will help to remove dissolved organic waste before it can break down into more harmful substances.

Anemones do not have décor requirements. However, artificial or live rock should be present so that anemones can be placed in a suitable location (see the Feeding section below). 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 required to provide nutrition through the zooxanthellae. Different anemones will have different light requirements (see “Feeding” below), so it is important to ensure there is sufficient light in the aquarium. Ask your OATA retailer for advice on suitable lighting for anemones. Anemones will also require adequate water flow (see “Feeding” below), and extra circulation pumps may be required to create appropriate flow patterns. As anemones can detach and move, it is important that any intakes to pumps or filters have protective grills or screens to prevent anemones being sucked into them.

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 above.



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Introducing your anemone

Before adding any anemone, seek advice from your OATA retailer to make sure that your aquarium is appropriate for the anemone 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 livestock 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 is 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 livestock, leading to unhealthy levels of ammonia and nitrite, which may cause anemones to become ill or die.

Your OATA retailer will usually sell your anemone to you in a plastic bag, try not to keep them in this for too long. Once purchased, take your new anemone home as quickly as possible because they are easily stressed by changes in water chemistry, extreme temperatures, and rough handling.

Once home, your anemone 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 anemone 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 anemone for up to an hour. Anemones will struggle with changes in water chemistry more than fish and so good care should be taken during the acclimation process. Once complete, carefully place the anemone into the aquarium whilst introducing as little bag water into the aquarium as possible. After this, dispose of the bag and any excess water appropriately.

For very sensitive species, a better method might be the use of drip acclimation. This could be achieved by keeping the anemone in the container in which it is sold and a small airline siphon started to drip water into the container, slowly changing the water parameters to that of the aquarium. Ensure that the temperature does not fall too low during this procedure. Once conditions match, carefully remove the anemone from the container and place it in the aquarium. Dispose of the water in the transport container appropriately.

If anemones attach themselves to the bag in transit, they should be removed gently. Damaging the foot can be fatal for an anemone. If using drip acclimation, it might be best to put the anemone in a net first so that it cannot stick to the container. If an anemone does get stuck to a surface in transit or during acclimation, gently sliding a plastic credit card under the foot should help loosen it. Although it is best to place your anemone where you would like it to stay, it may move around the tank until it finds its preferred position. You may need to move any corals around in case it settles too close to them. Monitor your new anemone



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carefully for the first week, paying particular attention to water quality. If in doubt, contact your OATA retailer for advice.

If possible, quarantining new livestock in a separate aquarium for at least a week before they enter the main tank can help reduce any risk of disease spread from new inhabitants. Ask your OATA retailer for advice on this topic.

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). Filters should be well maintained, with regular checking and cleaning to prevent 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. Protein skimmers should be regularly cleaned to maintain their performance

Good husbandry is essential as anemones 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 carbonate hardness every week, especially during initial set-up and after adding extra livestock. It is also important to regularly monitor salinity and use reverse osmosis water to replace any water lost through evaporation.

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:

- mouth gape – unless defecating, anemones should have a closed mouth
- behaviour – reduced tentacle extension or not opening at all
- colour – darkening of colour, bleaching or presence of brown dead tissue
- tissue recession – noticeable reduction in size
- feeding – reduced intake or constant expulsion of stomach contents
- movement – detaching and movement of an anemone that has been settled for some time

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.



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Feeding

Anemones obtain their nutrition through both photosynthesis and through prey capture. Therefore, it is important that lighting levels are correct in the aquarium. Generally, anemones require a moderate to high amount of light, but this varies by species so it is important to ask your OATA retailer for guidance on placing your anemone under the correct light.

Anemones will also need to be fed larger prey items. These can be in the form of pellets or large frozen items such as lance fish, cockles or mussels. It is important to ensure food items are not too large, otherwise the anemone will reject them. Place the food item into the anemones tentacles and it will manoeuvre it into its mouth once it has recognised it as food. When food items are given, take care not to overfeed as this can lead to a build-up of uneaten food which then breaks down releasing toxic waste into the water. Feeding twice a week is satisfactory for most species. If in doubt, ask your OATA retailer for advice on appropriate feeding levels.

Water flow is important to help remove waste from feeding and photosynthesising. As with light, different species will require different water flow rates. Generally, anemones appreciate moderate to high water flow and should gently sway, but this will vary by species. Ask your OATA retailer for guidance on placing your anemone in the correct water flow.

Compatibility

Adding an anemone to an aquarium does require some thought. If purchasing an anemone for a pair of clownfish, it is important to ensure that your chosen anemone will host the species of clownfish you own. Keeping clownfish with an incompatible anemone species is likely to result in them being stung or eaten. Anemones are not essential when keeping clownfish because the majority of available clownfish are tank-bred and it is unlikely they have seen an anemone before. Anemones should not be kept with slow moving fish species or those which spend a lot of time near rockwork, such as dragonets because they are likely to predate on any species they can catch. Corals can be kept with anemones, provided there is enough room around them to prevent the anemone stinging. Some species, such as puffers or triggerfish, may damage anemones and should be avoided. Always consult your OATA retailer before adding an anemone to a marine aquarium.

Breeding

Most anemones are unlikely to spawn in captivity. In the wild, environmental cues prepare anemones to spawn and members of the same species will take part in mass spawning events. Once egg and sperm meet, a larvae (called a planula) is produced. This spends time swimming in the water column before it settles and produces a young anemone which is very vulnerable until it has grown. The cues required for spawning are not present in the home aquarium, and if planula were to be produced, they would likely be damaged in



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pumps, filters and skimmers. However, there are reports of rock flower anemones spawning in home aquariums. They can spawn twice a year (spring and autumn) if they are fed enough, and the young will settle around the adults. The most common method of reproduction in captivity is through asexual reproduction. This involves the direct replication of an individual anemone. Large anemones will split in half to produce two smaller anemones, and this is sometimes seen in aquariums.

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 | ➤ Water testing kits (ideally ammonia, nitrite, nitrate, pH and water hardness) |
| ➤ Filter* | ➤ Gravel cleaner/siphon cleaning device (recommended) |
| ➤ Heater* | ➤ Aquarium decorations |
| ➤ Lighting* | ➤ Bucket for water changes |
| ➤ Gravel or sand | ➤ Live or artificial rock |
| ➤ Aquarium salt and a hydrometer or refractometer | ➤ Protein skimmer* (optional but recommended) |
| ➤ Access to reverse osmosis water or a reverse osmosis unit | ➤ Ultraviolet steriliser (optional but recommended) |

*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 your anemones/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 anemones.

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 invertebrates properly for the duration of their life and provide an aquarium which can accommodate all fish when fully grown**



watercourses.

*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) water or decorations so that non-native organisms do not enter natural

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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