

## Tropical Marine Fish

### How to care for dragonets

Dragonets (also known as mandarins) make appealing aquarium inhabitants due to their small size, bright colours and interesting swimming style. They are from the *Callionymidae* family and occur on coral reefs mainly in the Indo-Pacific region. Dragonets only grow to a relatively small body size and are generally tolerant of other species, although they do have specific dietary requirements. Always consult your OATA retailer before purchasing any dragonet to ensure they will mix with current tank mates.

Thanks to TMC for use of this picture



### Water requirements

Dragonets are usually undemanding of water chemistry and their suggested parameters are shown below. These parameters are a general guide for this group of fish, so it is important to check with your OATA retailer for any species-specific requirements before purchasing. Please also note that if keeping these fish in a reef aquarium, some parameters will need to be altered to accommodate more sensitive species.

Salinity:	Between 1.020-1.025
Temperature:	Between 24-26°C
pH:	7.9-8.3
Ammonia:	Zero mg per litre
Nitrite:	Zero mg per litre
Nitrate:	Not to exceed 50 mg per litre
Carbonate hardness:	Hard (8-12°dkH)
Calcium:	Between 380-450 ppm
Magnesium:	Between 1250-1350 ppm

### Biology

Dragonets do not grow large, with most species reaching around 6-8cm. They are some of the most popular species in the marine aquarium hobby due to their bright colours, particularly the green mandarin fish (*Synchiropus splendidus*). Some species of dragonet, such as the scooter blenny (*Synchiropus ocellatus*), are often referred to as “blennies”, but this is incorrect. Dragonets can live for many years in a well-matured set-up with the correct food and good water quality.

In the wild, dragonets spend most of their time in sand and rubble beds or rocky crevices looking for prey items. They naturally predate on small invertebrate



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species such as copepods, and these must be provided in the home aquarium. Therefore, it is important to only introduce these fish into a mature aquarium as live food populations will have had time to build up. Dragonets can be weaned onto frozen copepods and other planktonic species, and so frozen foods should be included with live foods to begin the weaning process.

Some dragonet species are bred commercially, and tank-bred individuals are often available. Tank-bred specimens have often adapted to frozen and dried foods and are easier to feed than their wild-caught counterparts. It is usually best to keep dragonets alone as they may become territorial with other dragonet species in the same aquarium. Sometimes male and female pairs can be kept together, but two males will fight unless they are in a large aquarium.

Dragonet species can usually be sexed by using differences in the appearance of the dorsal fins. In the red scooter blenny (*Synchiropus stellatus*), males will have a larger, more colourful dorsal fin. In mandarin fish, the male will have an enlarged first dorsal spine.

## Aquarium requirements

As a general rule, you should within reason, buy an aquarium as large as possible. Although these species are small, it is recommended that an aquarium of at least 120 litres with plenty of live rock or rubble is used for an individual, to ensure that there is a large enough population of live invertebrate food species. If live food is regularly bought or cultured, the aquarium could be smaller. A larger aquarium will also provide more stability to environmental conditions such as temperature and water quality. 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.

It is essential that dragonets have live or artificial rockwork to provide them with space to hide and for live food organisms to reproduce. Additionally, a thick bed of coral sand (4cm at least) is important to allow live food species to reproduce and will make dragonets feel secure. Although unlikely to swim in a traditional way, an area of open coral sand might be useful to allow them to behave naturally. There should be a moderate water flow to provide good surface movement and to ensure detritus doesn't accumulate.

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. This will not need to be particularly bright for dragonets alone but may need to be brighter if keeping with coral species - see our coral care sheets for more information.



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**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 fish

Before adding any fish, seek advice from your OATA retailer to make sure that your aquarium is an appropriate size for the dragonet 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 fish you have in your aquarium slowly as the population of beneficial bacteria established when maturing your aquarium filter need to increase every time more fish 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 fish, leading to unhealthy levels of ammonia and nitrite, which may cause fish to become ill or die.

Healthy fish have clear bright eyes, undamaged fins, intact scales, no ulcerations or bumps, appropriate swimming behaviour and steady breathing. Do not purchase a seemingly healthy fish if sickly fish are present in the tank with it. Signs of disease can include clamped fins, flicking against gravel or décor and shimmying (shaking). Diseases can be easily carried by fish that do not show any clinical signs. If in doubt, ask your OATA retailer for advice as they will have in-depth knowledge and experience.

Your OATA retailer will usually sell your fish to you in a plastic bag, try not to keep them in this for too long. Once purchased, take your new fish home as quickly as possible because fish are easily stressed by bright lights, extreme temperatures, noise and movement.

Once home, your fish 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 fish 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 fish for up to 30 minutes. Once complete, carefully release the fish into the aquarium whilst introducing as little bag water into the aquarium as possible. This is especially important if keeping fish with any invertebrate species as some retailers run copper in their systems, which is toxic to invertebrates. After this, dispose of the bag and any excess water appropriately.

For sensitive species or to ensure retailer water does not enter your aquarium, a better method might be the use of drip acclimation. This could be achieved by keeping the fish 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,



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carefully net the fish from the container into the aquarium. Dispose of the water in the transport container appropriately. Monitor your new fish 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 dragonets 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 fish. 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 fish 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:

- swimming behaviour – hanging at the surface, sitting on the bottom or erratic swimming
- colour – turning a darker or paler colour than normal
- temperament – changes in level of aggression or hiding more than normal
- breathing – gill covers moving at a slower or faster rate than normal
- appearance – development of white spots or fluffy growths, loss of fins or scales
- 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



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As already mentioned, dragonets will do best on a diet of live food, or frozen food if accepted. Many mature aquariums will naturally build up live invertebrate food populations, but it is best to supplement these with live or frozen copepods which can be bought from your OATA retailer or bred at home. In more advanced set-ups, a refugium can help boost natural live food populations, but speak to your OATA retailer for more advice. Most individuals, particularly those that are captive-bred, will take small frozen meaty items such as frozen copepods, small pieces of enriched brine shrimp or finely chopped mysis or krill. Some may even take prepared foods like small pellets. Always ask your OATA retailer what they are feeding their dragonets before you purchase them.

Dragonets should be fed at least twice a day, but three times is better. They are slow, cautious feeders and so need time to find and eat any frozen or prepared foods. They will also hunt for what they can find naturally in the aquarium throughout the day. 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

Dragonets can be kept in male and female pairs, but only if the tank is large enough. Two males should not be kept together, even if they are of different species. Dragonets should not be kept with any boisterous species as this will inhibit their ability to feed. Good tank mates include small gobies, fire fish, cardinal fish and other calm species. They can be kept with slightly more active species, provided there is enough space for them to hunt and hide. They should not be kept with any species which might out-compete them for the live food population in the aquarium, such as some wrasse. Consult your OATA retailer before adding a dragonet to your aquarium.

## Breeding

Dragonets have been bred commercially, but it is unlikely that they will breed successfully in the home aquarium. The male and female will swim upwards together, releasing the eggs and sperm into the water column. In the wild, the eggs develop and hatch into larvae which need a constant supply of microscopic food. However, in home aquariums their eggs are likely to be eaten by fish or corals, or sucked into the filters before they can develop.

## 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.



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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\*
- ▶ Gravel or sand
- ▶ Aquarium salt and a hydrometer or refractometer
- ▶ Access to reverse osmosis water or a reverse osmosis unit
- ▶ Water testing kits (ideally ammonia, nitrite, nitrate, pH and water hardness)
- ▶ Gravel cleaner/siphon cleaning device (recommended)
- ▶ Aquarium decorations
- ▶ Bucket for water changes
- ▶ Live or artificial rock
- ▶ Protein skimmer\* (optional but recommended)
- ▶ 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 is ready for your fish.

### 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 dragonets.

### 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...

### 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.



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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

### 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) water or decorations so that non-native organisms do not enter natural watercourses.

Visit [ornamentalfish.org](http://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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