



## Mini guide

### Potamotrygon

Fresh water Stingray

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#### Introduction



Please take notice of this document carefully before purchasing these wonderful creatures!

Stingrays are one of the most stunning freshwater species available. Remarkable aspect is that together with sawfish and sharks, rays do not have any bones in their body. The skeletal structures are being composed primarily by cartilage.

Potamotrygon (freshwater stingrays) are found in de rivers and lakes of South America. For example Rio Xingu, Rio Fresco, Rio Curuá, Rio Iriri, etc.

Warning: These fish can be dangerous! The actual stinging apparatus or spine is formed from dentin and possesses associated venom glands. Most natives of the countries in which they're found are far more fearful of rays than other supposedly life-threatening species, such as piranha.



## Maintenance

To house rays in a tank, decor isn't really necessary. You can however add some large chunks of bogwood, or rocks to decorate the tank.

**TIP:** As stingrays are really good movers, it is important to ensure that any decoration is too heavy to be moved around. Better is to secure it to the tank in some way.

Do not exaggerate decoration in a ray tank, they need as much as possible open swimming space. Plants that require rooting in the bottom substrate will be eaten by the rays. Dim lighting is preferable, although once settled, most rays will also be active under brighter conditions.

There is an enormous choice of substrate available and the choice is depending on personal preference. Some like river sand which is an excellent choice, especially for juveniles. It's arguably the closest representation of what the species encounters in nature. Others use standard aquarium gravel. The third possibility is simply to omit substrate completely. The last choice allows you easier tank maintenance, but it can make the set-up appear a little stark and unnatural.

**TIP:** If you decide to use sand you will notice the rays regularly bury themselves in sand like they do in wild and that's fun to behold!

Table 1 – Maintenance info

Min. size tank	Depending on size. 500 – 2.000 liters
Place in tank	Bottom dweller
Water temperature	24°C – 30°C
Streaming	Medium
Water change	Weekly 50%
pH	6,0 – 8,0
Temper mutual	Most friendly, except some males mutually
Temper tank mates	Top predator, unsafe to keep with most small fish

One of the most important aspects of a ray tank is filtration. A large and efficient biological filter is needed to cope with the amounts of biological waste produced by an active predator of this size. There is much to choose concerning filtration methods and equipment, so we will not go into this matter. Remember that frequently maintenance is necessary, so an easy approach to the filter equipment is preferable.

**TIP:** An external filter including heater is much preferable because of the easy maintenance and there is less chance of the rays destroying anything or worse, burning themselves by resting on a submerged heater stat.

Of course, it is important with these high water temperatures to provide lots of oxygen to meet the high oxygenation levels required by rays.

**TIP:** From safety point of view it is preferable to connect the oxygen pump and the filter pump to different power groups. If one power group fails, you have one system still going.



Tank maintenance must be similarly stringent. Around 50% water change each week should be considered standard for a ray tank. Most rays can stand fairly high levels of nitrates, but they will eat less and they will be less active. Build-ups of other nitrogenous wastes are not tolerated.

And finally, freshwater stingrays do not tolerate direct contact with aquarium salt. This will cause a burning reaction on the sensitive skin. This is a very common problem when many hobbyists unknowingly add salt into the aquarium direct from the bag.

**TIP:** This could be overcome by dissolving the salt into a bucket first before adding it gradually into the aquarium.

When it is done correctly, salt does promote healing and even a small amount neutralizes nitrite poisoning in water. Remember, do not overdose your aquarium more than you strictly need

## Behavior

In nature, rays are among the top predators in the ecosystems they populate and they are unsafe to keep with most other species. Rays also seem to prefer a quiet life and will often fail to thrive when kept alongside very aggressive or territorial tank mates.

When you consider keeping other species together with rays, remember the main rule: The best tank mates are large enough not to be eaten, peaceful and ideally occupy the upper parts of the tank. Some Cichlids, such as Heros, Geophagus and the bigger Cichla's work well.

**TIP:** If you want to combine another bottom dweller together with rays, consider the bigger species of the Loricariidae family, like L024 and L025. Our experience with this combo is positive. As an extra benefit, the Loricariidae will clean up all food remainings.

Another often seen tank mate is Asian or South American Arowana and in a roomy tank this can be a very striking combination. Obviously all these species grow to an impressive size, so tank volume should be the primary consideration before any choices are made.

## Diet

Wild rays feed chiefly on other fish and aquatic invertebrates, including worms and crustaceans. They're active fish with a high metabolic rate and as such will need feeding at least once or twice a day. They're also notoriously big eaters and it's going to cost you a considerable amount of money to keep even a single specimen in good health. In general, an exclusively fish meaty diet is preferable, although some will also learn to accept dried foods.

Juveniles (often sold simply as "teacup" rays regardless of species) relish live or frozen bloodworm, Tubifex, Artemia, krill and suchlike. Adults should be fed correspondingly larger foods, such as whole mussels, cockles, prawns, squid, whitebait (or other fresh fish) and earthworms.



**TIP:** A varied diet is needed to keep the fish in top condition.

When new rays are bought, frozen foods may be refused at first, so bulk them up on live foods. Live Earth worms and Blood worms will do the job until they have enough weight to be safely weaned onto dead alternatives.

**TIP:** If the rays are still very small, the worms can be chopped for better eating results.

Table 2 – Diet

Generally	A varied diet is needed to keep the fish in top condition
Adults	Mussels, cockles, prawns, squid, smelt, earth worms
Juveniles	Small mussels, cockles, prawns, squid, chopped smelt, earth worms
Pups	Chopped mussels and earthworms, prawns, artemia
Frequency	Adults and juveniles at least once a day, pups twice a day.

Rays should not be fed the meat of mammals such as beef heart or chicken. Some of the lipids contained in these meats cannot be properly metabolized by the Ray, and can cause excess deposits of fat and even organ degeneration. Similarly, there is no benefit in the use of 'feeder' fish such as livebearers or small goldfish. Risks involved with these include the possible introduction of disease or parasites.

## Sexing

Stingrays are easy to sex. Males have a pair sexual appendage known as "claspers", one on each pelvic fin. These are used to inseminate the female when mating and are clearly visible, appearing as finger-like extensions extending backwards from the inside of the fin. In young males they're much smaller, but can still be seen if you look closely.

## Breeding

Rays can be picky when it comes to choosing a mate. Simply buying a pair of rays and putting them together will not guarantee a successful pairing in the beginning. However, we experienced that after a while most Rays go along together and eventually will mate.

**TIP:** The ideal way to obtain a pair is to buy a group of juveniles, housing them in a huge tank and allowing them to select their own partners.

The spawning act itself is quite brief, lasting only a few seconds. Fertilization occurs internally, the male inserting one of his claspers into the cloaca of the female before releasing his milt. When mating, the male bites the female, this is normal behavior.

**TIP:** Therefore, it is better to keep a smaller male together with the female.



Following a successful mating event, the male should stop harassing his partner. In captive, Potamotrygon generally gives birth after 12-15 weeks, depending on water temperature and other factors.

During pregnancy the female will expend a lot of energy providing for her pups, and her appetite will increase significantly. There for it is essential to feed the female in sufficient quantities during this period.

In the latter stages the developing young can sometimes be seen as a visible lump rising from the posterior end of the female's back, although sometimes, especially when the female is well fed, this can be tricky to spot.

The pups usually have a small yolk sac attached at birth, and they will feed from this for anything up to a week. After the sac has been absorbed they should be offered high quality live and frozen foods several times a day.

**TIP:** We have very good results offering the pups chopped mussel and chopped earthworm.

## Import Rays

If you consider obtaining rays via import by plane, be sure you follow the policies of your country concerning import of living animals. For example, most countries want you to arrange some sort of import license. Ask your local authorities for proper information.

Health certificate: When importing Rays by plane, you will need a health certificate. Duketown Stingrays will take care of the necessary health certificate.

## Useful links

<https://www.duketownstingrays.com>

<https://www.facebook.com/duketownstingrays>

<http://www.youtube.com/user/MarkHuveneers/videos>

<http://www.fishbase.org/identification/SpeciesList.php?genus=Potamotrygon> <http://en.wikipedia.org/wiki/Potamotrygon>