

## The Gulf or Freshwater Pipefish

**Try breeding the gulf or freshwater pipefish--an intriguing fish that looks like a little like a seahorse and a tiny snake combined.**

*By Mike Hellweg*

One of the smallest pipefish, *Syngnathus scovelli* only grows to about 6 inches. Photo Credit: Gary Lange

Lurking among the eel grass and *Vallisneria* beds of the coastal southern United States from Georgia around Florida to Texas, then on down the Central American coastline to Brazil is a strange, almost mythical creature: the Gulf Pipefish (*Syngnathus scovelli*), known among hobbyists as the freshwater pipefish. Looking like a cross between a seahorse and a tiny snake, these interesting little critters are not often seen by people, though they are common throughout their range and are one of the most plentiful of the syngnathiids along the southern U.S. They are often found in the stomachs of larger sport fish and may form part of the diet of these large fish.

*Syngnathus scovelli* are one of the smallest pipefish species, reaching a maximum size of about 6 inches, with females growing a bit larger than males. Their maximum girth is about that of a pencil. The female is marked with a series of silver V-shaped stripes down her sides. Their usual coloration is a mottled brown in both sexes, though the females are a bit darker than the males. The daily greeting ritual brings out their color, with females turning almost black and males turning a pale yellow. Females often have a much larger dorsal fin that is usually spotted black, though sometimes it is completely black. The dorsal fin of the male is usually clear. The most telling difference in adult fish is that the male has an almost triangular appearance to his lower abdominal region - that is his pouch. The abdominal bulge makes a pregnant male very obvious.

### About the Author

Mike Hellweg has been an active aquarist for 30+ years and has been actively breeding fish since he was 9, working almost exclusively with small fishes that mature at 4" or less. With more than 150 species from 20 families, he is the top ranked breeder of all time in his local club. Mike is currently the President of the Missouri Aquarium Society and is on the Board of Directors of the American Livebearer Association. He has written dozens of articles for various hobby publications. He also owns and operates a retail fish business.

Along with the male's pouch, pipefish have many features in common with the seahorse. They have a hard external skeleton, a tube-shaped mouth that "vacuums" up food, a dorsal fin that propels them through the water and a tail to help hold them in position. The male gives birth to live, fully formed young after a brief gestation period. Because of the external skeleton, they cannot store fat reserves and therefore must feed continuously. A few days without food, while not harmful to other fishes, would be deadly for the Gulf pipefish.

A group of up to a half dozen adult gulf pipefish can be kept in a 10-gallon tank. The tank should be set up with a substrate of crushed coral, oyster shell or another marine aquarium substrate. A sponge filter is perfect for filtration and will come in handy at feeding time. To simulate the eel grass and *Vallisneria* beds of their native habitat, add a forest of plastic *Vallisneria* or other grasslike plants. Leave an area at the front of the tank clear of plants, so you can observe their greeting ritual in the morning. Make sure that some of the plants are around the sponge filter so that the fish can anchor there and feed in the current. I always add a group of olive nerite snails (*Neritina reclivata*) to help control algae, as well as a clump of Java moss (*Vesicularia* sp.) both as a hiding place for the fry and as a source of supplemental food for them. Both the Java moss and the olive nerites can handle the fluctuation of salinity that appears to be necessary to keep the pipes happy.

Water parameters overall appear unimportant, as the fish are found in a wide range of habitats from totally fresh to totally marine, and they probably move between the two. I have found that a fluctuation in salinity is necessary from time to time. I accomplish this with a water change of about 50 percent with full-strength sea water. The next water change is done with pure freshwater, and the next would be a mixture of the fresh and marine; the next is back to pure fresh or pure marine.

The order and the specifics don't seem to be as important as the change. This seems to simulate the daily change in their native habitat, where they may be in freshwater for most of the day, but when the tides come in, the salinity may go up. This seems to be one of the triggers to get them into spawning condition. To simulate the natural situation as much as possible (tides fluctuate on a monthly basis, and there is also heavy freshwater run-off during storms), I do the changes randomly: sometimes every day, other times every few days, and yet other times it was weekly. The key isn't a specific

amount, frequency or type of change, but the fact that there is a change at all.

A heater will not be necessary, as long as the water temperature doesn't go below about 60 degrees Fahrenheit. Fluctuation with the seasons is not harmful and may be beneficial. I did experience a die-off of several specimens when the temperature shot up into the upper 80s after the furnace first kicked on, and I had forgotten to open the vent to allow cooler air into the fish room.

Pipefish are visual hunters, so they need good lighting. They spend the entire day hunting food. Their eyes seem to inspect every tiny moving thing in the tank. In the wild, they eat insect larvae and small crustaceans, but will also eat young snails, isopods, copepods, and whatever else is seasonally abundant and small enough to be sucked into their tube-shaped mouths. I try to mimic this diet with a daily feeding of newly hatched brine shrimp and also a daily feeding of frozen cyclops. They seem to enjoy picking grindal worms from a floating worm feeder, and even adults will hunt vinegar eels. Other than the frozen cyclops, they ignore frozen and prepared foods. Sometimes when I feed them, they will all congregate around the sponge filter. Instead of hunting around the tank, they'll spend several hours gobbling up anything that is drawn to the filter in the current. They are smart little guys!

The tank should be in a part of the house where it is exposed to indirect daylight. As the light slowly builds in the early morning, the pipes begin their day with a greeting much like that done by seahorses. Usually only the largest female participates with the larger males. She darkens in color, and the silver V-shaped stripes almost glow. The males begin to change to their yellow coloration, as well. They take a vertical position in the open area at the front of the tank, looking like the two numerals in the number 11. They twist around a bit, not quite touching each other. If the male is ready to mate, he puffs and flaps his pouch at her. If not, the male swims away, and another male moves in. The eggs are transferred to the male's pouch in a very quick, belly-to-belly quiver, followed by a quick separation. The male then swims off, and another male moves in, and the ritual is repeated.

The male broods the eggs for about two weeks, give or take a few days, depending on temperature. Development is a bit quicker at warmer temperatures. Once mine were born, the young pipefish were already swimming around feeding when I saw them in the morning. The young fish are fully formed copies of their parents but are very tiny (about three-eighths to a half-inch long).

They are ravenous eaters. I feed them vinegar eels, microworms, infusoria, paramecia and frozen cyclops. They eat everything! I also add a large clump of Java moss for them to forage upon during the day. Java moss is covered with microscopic life that will provide them with a continuous source of food. The fry will be seen all over the Java moss for most of the day, hunting down every morsel. I add fresh Java moss every few days to keep the supply of food constant.

After a few weeks, the fry are about an inch long and can be seen gathering around the sponge filter at feeding time with their older siblings and the adults. I have not witnessed any predation on the fry by the adults, but of 100 or so fry, only about 30 are still around after a month, and I never see any bodies. Some people have reported similar ratios with no adults in the tank, so I'm not sure exactly what is going on. It is entirely possible that even with the multiple feedings a day and with the fresh Java moss every few days, there just isn't enough food to feed them all and the weaker fry starve. It may also be that there isn't enough food of a particular size to feed them all for the critical first few days. The fry that I do see have fat bellies and are actively eating, and the adults seem to ignore them.

While this tiny cousin of the seahorse makes an ideal aquarium resident, you will have to pay attention to the details, or you won't succeed in keeping the fish alive or getting them to breed. Gulf pipefish are not fish for the casual aquarist. If you don't think that you can meet all of their requirements, please don't keep these animals. However, if you believe that you are up to the challenge, give these fascinating animals a try. You'll be glad that you did!