

Dollar Sunfish: Spawning Two Varieties of *Lepomis marginatus*

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by

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I have spawned two varieties of *Lepomis marginatus*, one from North Carolina, the other from Louisiana. Herein I describe the differences in these two varieties and the methods I used to spawn them.

## Distinguishing Between the Two Strains

The two distinct strains of the dollar sunfish are easy to tell apart. The North Carolina, or eastern, strain is a pastel-colored fish with larger-than-average fins and a golden-orange background color. The Louisiana variety is dark blue with a dark, orange-red background color; its fins are of typical *Lepomis* size. Another distinguishing characteristic is the orientation of the mouth and its associated feeding habits. The eastern variety has a more down-slung, or subterminal, mouth; it prefers to feed in the mid-water areas. The Louisiana variety has a superior mouth, and more willingly feeds from the surface than off the bottom. Both strains enjoy the same foods and readily adapt to commercially prepared foods.

## Preparations for Proper Breeding Conditioning

Do not feed prepared foods (except as filler). Proper feeding must include a variety of live foods. The best live foods are earthworms from rich soil (but not manure piles), tiny fish, small crustaceans or pieces of larger ones, and crickets dusted with a vitamin powder. Feed heavily at least once a day. I like to feed non-aquatic foods in the morning, and aquatic ones late in the day. That way the fish will have time to pick up any uneaten

non-aquatic foods during the day, while uneaten aquatic foods will be alive the next morning for the fish to eat.

I'm sure that a cooling period, coinciding with a shorter photoperiod, helps get dollar sunfish ready for spawning. But this has never been an option in my setups since other inhabitants of the fish room require heat. Fortunately, dollar sunfish do not require a cooling period, which makes them that much easier to breed.

## Three Spawning Methods

I've spawned dollar sunfish using three different methods. The first method, which I call the "cheating method" (although there is nothing at all wrong with it), involves conditioning the breeding pair (or group) in an aquarium using the feeding regimen described above. I then move the fish outside to a pool. The pool should consist of two depths: a shallow, gravel-covered area protected by gnarled roots and some floating weeds, and a deep area with heavy vegetation.

The second method requires a three-to-four foot tank, set up in a natural way with weeds, roots, etc.

The third method requires one or two 10-gallon tanks. You will need either two 10 gallons side by side, or a sturdy divider in just one. The breeding pair should not be raised together in the 10-gallon, but in the tank from option two. The 10-gallon should have a nice layer of gravel and a floating mass of plants.

There's no filtration in the pond, but I use foam filters in the tanks. Lighting for the tanks is supplied by two 40-watt bulbs, one warm white and one cool white.

**The Pool Spawning Method** Set up the pool as described above. Get the water temperature to 75-79°F. Then add the fish. Condition with live foods, but be careful that the foods don't turn around and eat the tiny fish fry instead.

Under these conditions, the male should set up a nest in the shallow part of the pool, perhaps underneath roots or weeds. You may not notice the nest, but if the male stays in his spot when disturbed, he most likely has fanned out a nest. Sunfish will spawn at any time of day, so watch closely for eggs. As soon as the male is guarding eggs you will want to remove the female(s). Simply fish them out with hook and line. You don't want to catch the male off his nest. But if you do, carefully remove the hook and return him to his post.

Once fry start leaving the nest area, you should remove the male. Supplement the fry's diet with baby brine shrimp or daphnia (although plenty of naturally occurring daphnia should be in the pool already).

**The Large Aquarium Spawning Method** Set up a 30- to 75- gallon aquarium with thick plant and driftwood cover. Add one or two males and two to four females. Feed heavily and change the water often. Males should start defending areas and fanning nests. Females should start to fill up with eggs. Once they do, spawning will commence. Remove any males that are not nesting, and any females as soon as possible, as they will be killed by very good father dollar sunfish.

Eggs hatch in approximately three days. Let the male guard the fry; he shouldn't eat them, but may in fact clean the fry with his mouth, and catch any "early nest leavers" and return them to the safety of the nest.

Thick plant growth is important because it stimulates the growth of infusoria. The free-swimming fry will start eating the infusoria when their yolk sacks are depleted. They'll also take baby brine shrimp. Remove the male at this time and any remaining adults. Continue to raise the fry in the tank. Feed as many times as possible, but make sure all the food is eaten. (It's hard cleaning a tank full of fry.) The fry should grow quickly and begin to accept other small live foods. Feed them the largest food items they can handle, as this seems to increase their rate of growth. Once the young fish reach the size of a quarter, they may begin accepting prepared foods.

**The 10-Gallon Spawning Method** This method is nice for someone with limited space; however, it requires more work and time.

Place two 10-gallon tanks side by side. Put the same

kind of gravel, thick masses of floating plants, and foam filters in both. Condition a male and a female in the separate tanks. If the male is too busy watching the female, slip a piece of paper between the tanks. When the male has fanned the nest and the female is ripe with eggs (she'll have a full-looking belly, even long after feeding), place a divider in the male's tank and add the female. Flip the divider up to let the female in with the male and watch carefully. The male will continue the courtship dance, blindly dashing around the tank's perimeter. If the female wants to spawn with this male, she'll take on female spawning coloration—dark and light bars alternating down the side against a grayish background. The transformation is so radical she'll look like a different fish. Once this happens, the chances of getting fertilized eggs are good. The two fish will go to the nest and circle it, the female on her side, the male upright, stopping every so often to drop a few eggs and fertilize them. When the male is done he usually drives the female from the nest. It's important to remove her, or to put her on the other side of the divider, or else she'll be killed quickly. The floating plants provide some refuge for the female once spawning is complete. They also provide food for the fry.

Once the fry are free swimming, remove the male. The process can be repeated in another set up, while the fry begin growing in this one.

### **Other Important Notes**

Whichever method you use, I hope you have more fry than you ever thought possible. In a little over a year, these fish should be of spawning age themselves. Be sure to pass your extras along to other interested aquarists.

Caution: Do not mix strains of dollar sunfish, unless you are carefully documenting the crossings and do not unwittingly pass the F1s on to other aquarists. Due to the uniqueness of each strain, it's akin to hybridization to mix them. I keep my fish straight by adding a location to the Latin name on each tank's label. I borrowed this technique from killifish keepers. If it works for these fish, then why not our native species, too?

Dollar sunfish are ideal residents for the garden pond. They show off nice colors when the sun shines on them. And they're usually not aggressive to other non-sunfishes too big to swallow. Add some of the killifishes and minnows that are found in its native habitat, and you could have a pleasing, natural-looking setup.