

Native Sunfish and Bass In Aquariums

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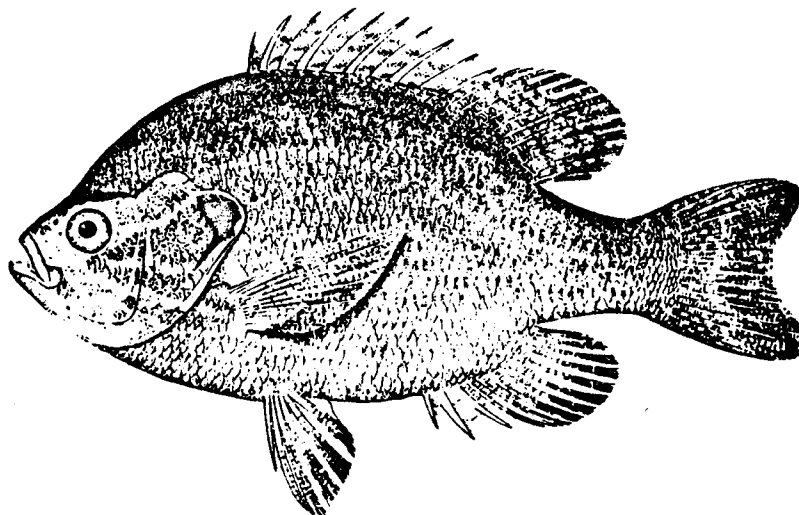
The sunfish family Centrarchidae includes many colorful, interesting fish well suited to life in an aquarium. This family includes the Sunfish, Black Bass, Crappies, Rock Bass, Warmouth, Sacramento Perch, Pigmy Sunfish and Flier. The members of the family range in size from 1½" in the Pigmy Sunfish to 2½" in the Largemouth Bass.

The original range of the family includes the eastern half of the U.S. and Southern Canada with the only exception being the Sacramento Perch which is originally from California. The various family members have been widely introduced into various other parts of the U.S. and Canada and also into Europe and elsewhere, because they are good eating and many are excellent game fish.

Sunfish very closely resemble the Cichlids in the general shape of their body and fins, in their method of caring for their young and in their general temperament. Although they are very similar, closer observation will detect three important differences. The first is to look at the lateral line. On a sunfish the lateral line is always one line or else is missing altogether as in the Pigmy Sunfish. In the Cichlids the lateral line is broken near the back into another separate line. Also the Cichlids have only one pair of nostrils where the sunfish have two pairs. The third and poorest method is to look at the ear flap on the gill cover. Sunfish almost always have a large extension on the gill cover and almost all Cichlids have only a small ear flap. The ear flap is not actually used in hearing but if you look closely at a sunfish you can easily tell how it got this name.

The Sunfish family also resembles several other native fish, notably the perch family Percidae and the true Bass family Serranidae. They can be distinguished from these by the ear flap and by the continuous single dorsal fin. It is almost broken or deeply notched in the Black Bass, but is not separated like it is in the perch and the true Bass.

Sunfish prefer clear water but P.H. and hardness are probably not too important if the fish are gradually acclimated over a period of several weeks to your local water supply. Most sunfish normally live in moderately hard alkaline water P.H. 7 to 8. The only exceptions to the rule are the genera *Elassoma* and *Enneacanthus* which prefer soft slightly acid water similar to the swampy lowland ponds they come from.



PUMPKINSEED SUNFISH

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Sunfish seem to prefer warmer water than many native fish and their best growth is at temperatures slightly above 70° but if the water gets much over 80° they will lose some of their color and probably won't spawn at these high temperatures. The actual temperature that you keep sunfish at is not as important as the variation in the temperature. All North American fish are used to large seasonal differences in temperature and it is this difference in temperature that normally triggers their spawning instincts. Sunfish are no exception and many species spawn only at a certain time of year as the water warms up in the spring. Others such as the *Lepomis* genus can spawn again in the fall, but the spawn is usually much smaller.

There are several ways to get the temperature down for the winter. The best are probably a refrigerator or using freshly pumped, non chlorinated well water running through the tank. If you can't use these methods try putting the tank near a cool spot in the house such as the basement floor. If you can get the water down to at least 60° for 2 months it will probably be enough. The other way would be to get your fish in the early spring after they have already had the cold season outdoors. If you can't do any of these things your fish may not spawn or reach their peak condition but they will still be healthy attractive fish and in some ways more desirable because they won't have the aggressiveness normal to the spawning season.

If you want to get sunfish, the best places to look are in the weedy shallows of lakes. As a general rule the smaller fish are nearer shore and the larger ones are deeper in the lake or river. It is a good idea to catch smaller ones if possible as they seem to adapt better to the aquarium. Probably the best way to catch them is with a hook and line. Use the smallest hook possible and it would be a good idea to file off the barb to prevent damage to the fish. The smaller fish are great nibblers so only bait the tip of the hook and strike as soon as you feel the fish touch the line to prevent him from swallowing the bait. When you catch the fish, handle him only with wet hands to prevent fungus and place him in a pail of the same temperature water. Keep changing the water to help keep it cool on a hot day or else put your fish in a small net hanging over the edge of the boat. If you use a net on the edge of the boat always lift the net into the boat whenever you are rowing to shore because if you leave the fish in the net they will rub against the sides of the net constantly when the boat is moving and will rub off their protective slime and they will have fungus within a few days.

There are several other ways to catch sunfish and the best is probably a minnow seine, but it is illegal for sunfish and bass in most states including Minnesota unless you get a permit from the conservation dept. Many sunfish, especially the black basses will not enter minnow traps or fish traps for some reason so this method is useless for some species. One other method is to use a dip net with a long handle. The best time is when the sun is out and the lake is perfectly calm with a mirror surface. If you keep the sun to your back you will see the sunfish swimming in water within 6 feet of the boat but as you get nearer they move to try to keep out of range but if you have a long handle you can easily reach them. This method only works good in 1 or 2 feet of water where the fish can't get down too deep to net them easily. This method is also illegal without a permit, but you might try talking to your local game warden. He probably won't object if you explain that you only want a few specimens for your tank and would prefer to net them without a hook and line. This method only works for small 1" or 2" fish as the larger ones are too fast for a dip net.

When you are collecting sunfish, check them carefully for parasites, but the little black spots that many fish have are probably not contagious, although they are unsightly if the fish has many on it. These black spots are caused by a worm that can only reproduce if eaten by a fish eating bird and then returned to the water to a snail and then back to the fish.

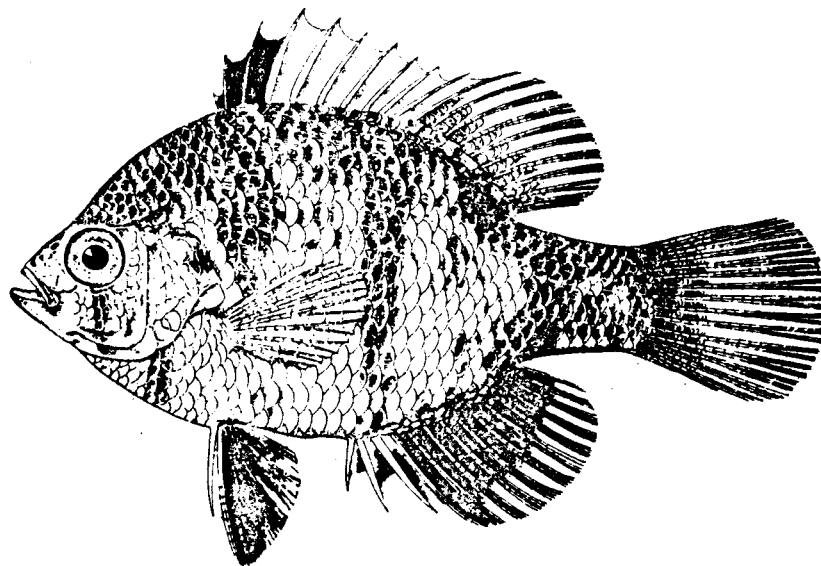
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The care of sunfish is somewhat different in different species and for this reason I have divided the family into 4 groups.

SUNFISH GROUP: The members of this group prefer to swim in schools in a lake, but in a tank they seem to be somewhat territorial minded and if the tank is too small they can be bullies even to fish larger than themselves. I have seen a small sunfish chase a northern pike that was large enough to eat the sunfish easily. This territorial instinct is not too noticeable in a large tank or when the sunfish is not nearing spawning season and they can be very peaceful at this time.

Various species of this group tend to hybridize with other species in the same genus. Because of this hybridizing it is necessary to carefully select the fish you take home for color. The best example of this is the common Pumpkinseed. In the wild you will probably find that only $\frac{1}{4}$ of the pumpkinseeds are brightly colored and the rest vary from colorfull to dull. These dull colored fish are the hybrids. The hybrids are just as easy to care for, but they never will get the bright colors of the pure species. Also, many of the hybrids can not reproduce.

Another thing to remember about color is that many of the sunfish species can change color and you will probably find that the fish that you caught look rather dull the next morning in your tank. The biggest offenders of this are the rock bass and the pumpkinseed. This loss of color is probably caused partly by fright and it usually takes several months for the fish to regain their normal colors, but it is well worth the wait. Personally, I think that some of the sunfish can put Discus to shame once they regain their full color. The color of the Rock Bass is influenced by the color of his surroundings and if you want a dark brown fish you would need dark colored gravel and if you want light colored Rock Bass you would need light gravel or a better lit tank.



BLACKBANDED SUNFISH

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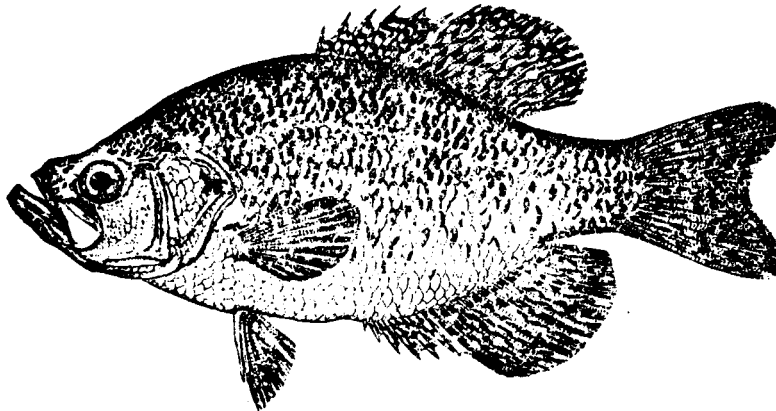
Feeding sunfish is quite easy. Most will readily accept pelleted fish food within a few days of capture and you can even train them to eat worms out of your fingers within one week. They will eat minnows too, but my sunfish seem to prefer pellets because they will eat pellets even though they have minnows in the same tank. The Green Sunfish and the Rock Bass are exceptions and they seem to prefer minnows, but can be trained to accept pellets too.

If you are interested in spawning sunfish you should use a large tank with a fine gravel or sand bottom. To sex the fish look for a slight swelling in the female and maybe a slightly more colorful male in the same species or dump several fish in the tank and wait until you get a nest full of eggs then remove the other sunfish.

In spawning, the male will hollow out a circular nest in the gravel about one foot across. Then he will attract the female to the nest to lay eggs which he fertilizes. He then assumes guard over the eggs and fans the eggs to prevent fungus and to provide circulation. He continues to keep a guard over the nest until the young are free swimming. When the male is guarding the nest, he is very aggressive and will not hesitate to attack anything that comes near his nest.

Sunfish normally spawn when the water warms up in the spring so the best way to induce them to spawn is to cool the tank down for 1 or 2 months and then gradually warm it up to 65° and they will probably spawn if they are at least 2 years old and sexually mature. Sunfish will spawn without the cold winter temperatures but the spawns will be larger in the spring after the cold spell. Also, the male will not attempt to spawn again for at least 2 months after spawning.

CRAPPIE GROUP: The fish in this group are quite a bit like the sunfish but are slightly more predacious then the sunfish. They prefer minnows, but can be trained to eat pellets with the same method used for the bass group. In the lake they prefer company and school like sunfish. They also spawn like sunfish.



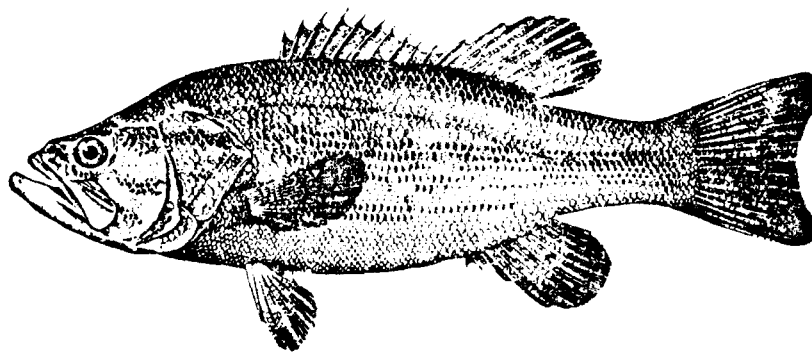
CRAPPIE

PIGMY SUNFISH GROUP: There are only three species of Pigmy Sunfish. They are the smallest sunfish known and rarely get over $1\frac{1}{2}$ " long when full grown. They are very peaceful, but being small would probably be best off in a tank by themselves. They spawn in plants after a short courtship. The parents do not eat the young so you can just let the young grow up in the same tank as the parents.

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THE BLACK BASS GROUP: In this group we have the largest members of the family. The members are all highly prized as game fish and are well known to sportsmen as being one of the smartest game fish. In nature, the bass tend to school only when young, and as they grow older they separate from the schools and spend the rest of their lives as predatory individuals. When young, bass eat various insects, minnows, worms and crustaceans, but as they grow larger, they seem to prefer only larger animals and fish.

In the tank they can be trained to eat pellets if you get them when they are young, not over 4" long. Once you have them trained this way, they will continue to eat pellets even when quite large, although they will prefer minnows and fish if you can get them. It is sometimes difficult to get bass started eating pellets and if you have trouble, I would suggest that you put in some sunfish with them, and when they watch the sunfish eat they will probably get the idea, if they are hungry enough. If you can not get them to eat within a week or so give them a minnow to keep them healthy, but continue trying pellets. They may take 2 or 3 weeks to train and if you don't feed them a minnow or worm they will probably starve before they get the idea, but once they learn to eat pellets they are easy to feed. One thing to remember, is that the pellets must be sinking when they see them because they don't seem to touch pellets if they aren't moving.



LARGEMOUTH BASS

Bass are very peaceful in a tank and don't normally bully other fish, but they have a large mouth and can swallow any fish less than $1/3$ their length.

Bass spawn like sunfish but require large nests and probably will not get enough room. If you must try spawning them try the Largemouth Bass because the others are too hard to spawn even in outdoor ponds.

FAMILY CENTRACHIDAE --- SUNFISH

* after the name means the species is native to Minnesota.
 The first scientific name is the name in popular current usage. The other names, if any, are former names for the fish or are species not recognized by most authorities. The family is divided into four groups based on their habits and physical differences.

PIGMY SUNFISH GROUP

		Size	Range
Everglades pygmy sunfish	<i>Elassoma evergladi</i>	1½"	Southern Georgia and Fla.
Banded pygmy sunfish	<i>Elassoma zonatum</i>	1½"	Southeastern U.S.
Okefenokee pygmy sunfish	<i>Elassoma okefenoke</i>	1½"	Okefenokee Swamp, Georgia

BLACK BASS GROUP

Redeye Bass	<i>Micropterus coosae</i>		Georgia, Alabama, Florida
Smallmouth Bass *	<i>Micropterus dolomieu</i>	18"	Eastern U.S. and S.E. Canada Introduced elsewhere, including Europe.
Suwannee Bass	<i>Micropterus notius</i>		Columbia County, Florida
Spotted Bass	<i>Micropterus punctulatus</i>	17"	Southeastern U.S.
Largemouth Bass *	<i>Micropterus salmoides</i> (<i>Huro salmoides</i>)	20"	Eastern half of U.S.
Madalupe Bass	<i>Micropterus treculi</i>	15"	Central Texas

CRAPPIE GROUP

Flier	<i>Centrarchus macropterus</i>	6"	Southeastern U.S.
White crappie *	<i>Pomoxis annularis</i>	12"	Eastern half of U.S.
Black Crappie *	<i>Pomoxis nigromaculatus</i>	12"	Eastern half of U.S.

SUNFISH GROUP

Mud sunfish	<i>Acantharchus pomotis</i>	6"	New York to Florida
Roanoke Bass	<i>Ambloplites cavifrons</i>	10"	Roanoke River, Va.
Rock Bass *	<i>Ambloplites rupestris</i>	12"	East of Rocky Mts. from South Canada to Gulf of Mex.
Sacramento Perch	<i>Archoplites interruptus</i>	20"	Central California
Warmouth *	<i>Chaenobryttus gulosus</i> (<i>Chaenobryttus coronarius</i>)	10"	Eastern U.S.
Blackbanded Sunfish	<i>Enneacanthus chaetodon</i>	4"	Atlantic coast lowlands from N.J. to Fla.
Bluespotted Sunfish	(<i>Mesogonistius chaetodon</i>) <i>Enneacanthus gloriosus</i>	2½"	Atlantic coast lowlands from N.J. to Fla.
Banded Sunfish	<i>Enneacanthus obesus</i>	3"	Atlantic coast from Mass. to Fla. freshwater

SUNFISH GROUP CONTINUED

		Size	Range
Redbreast Sunfish	<i>Lepomis auritus</i>	8"	Eastern U.S.
Green Sunfish *	<i>Lepomis cyanellus</i>	6"	Central U.S. Minn. to Tex.
Orangespotted Sunfish *	<i>Lepomis humilis</i>	4"	Central U.S. Minn. to Tex.
Bluegill *	<i>Lepomis macrochirus</i>	12"	Eastern half of U.S. Intro. elsewhere Inc. Europe.
Dollar Sunfish	<i>Lepomis marginatus</i>	7"	Southeastern U.S.
Longear Sunfish *	<i>Lepomis megalotis</i> (<i>lepomis pallidus</i>) (<i>Xenotis megalotis</i>)	8"	Eastern U.S. and S.E. Canada
Redear Sunfish	<i>Lepomis microlophus</i> (<i>Euphomotis holbrook</i>)	10"	Southeastern U.S.
Spotted Sunfish	<i>Lepomis punctatus</i> (<i>Apomotis punctatus</i>) (<i>Apomotis ischyurus</i>) (<i>Apomotis phenax</i>)	6"	Southeastern U.S.
Bantam Sunfish	<i>Lepomis symmetricus</i> (<i>Apomotis symmetricus</i>)	3"	Southeastern U.S.

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