



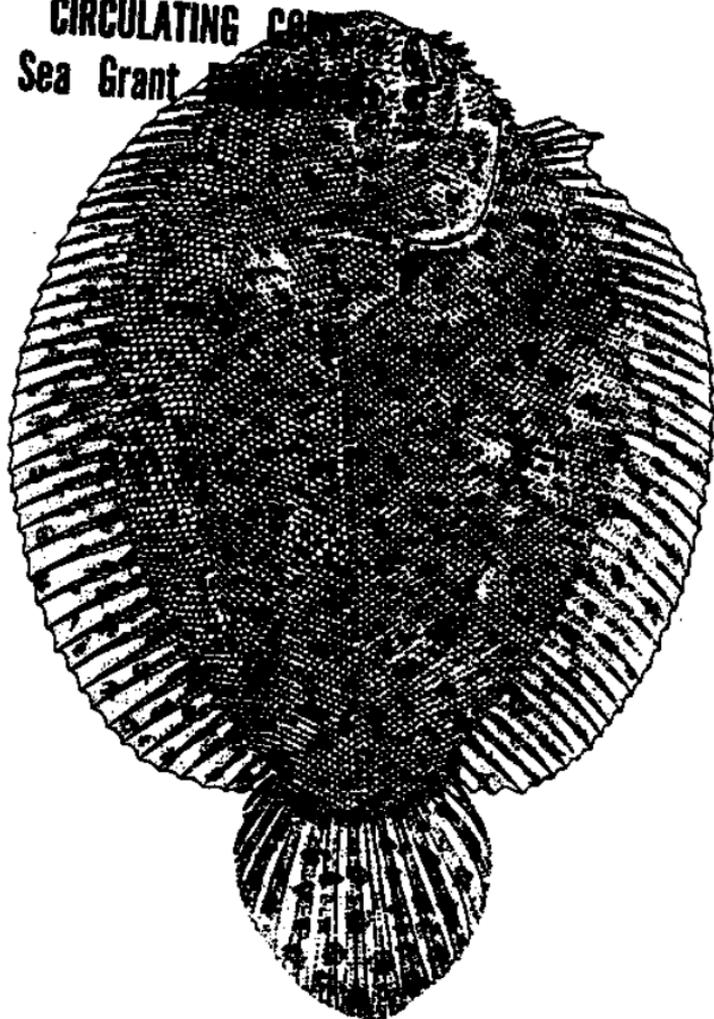
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Flatfish

In Alabama

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Flatfish

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Flatfish are a widespread group of fishes that are found from cold boreal habitats to warm, tropical environments. Atlantic halibut is a cold-water flatfish, and Mexican Flounder is found in warm water. Flatfishes have developed special features for living on the bottom, the most interesting of which is that both of their eyes are on one side of the head. When positioned flat on the bottom of the water column, flatfish can still see with both eyes. If you can imagine having both of your eyes on the left side of your nose as you lie on your right side, you have the correct orientation of a left-eyed flatfish. Some of the other peculiar characteristics of flatfish include:

- Adults are not bilaterally symmetrical.
- The body is highly compressed.
- Dorsal and anal fins are usually long.
- Adults do not have a swim bladder.
- Flatfish can change the color and intensity of their skin coloration.

This last trait of most flatfishes takes advantage of an existence on the bottom. Thus, flatfishes can match their background or sometimes bury in the sediment and lie in wait for unsuspecting prey. Common names for flatfishes include flounder, halibut, sole, plaice, dab, and turbot, names which often apply to species in different families. Many species are important in commercial fisheries and are valued as a food source. About 520 different species are found in 6 families.

The flatfishes also have a wide range in maximum size. An Atlantic halibut (*Hippoglossus hippoglossus*) weighed more than 660 pounds, and a Pacific halibut (*H. stenolepis*), 460 pounds. The smallest is probably the pygmy tonguefish (*Symphurus parvus*), which reaches its maximum size at 3 inches.

Most commercially and recreationally important flatfishes that occur south of Cape Hatteras through the Gulf of Mexico are members of the family Paralichthyidae. This group includes the two most commonly caught flatfish in the northern Gulf of Mexico: the southern flounder or "mud flounder" (*Paralichthys lethostigma*) and the Gulf flounder (*P. albigutta*). These two species look very similar, except the Gulf flounder has three distinct "bullseye" spots in a triangular pattern (Figure 1). Two other flatfish families that are common in the northern Gulf are the soles (family Soleidae) and tonguefish (family Cynoglosidae). The soles are right-eyed flatfish and rarely seen by the recreational fisherman,

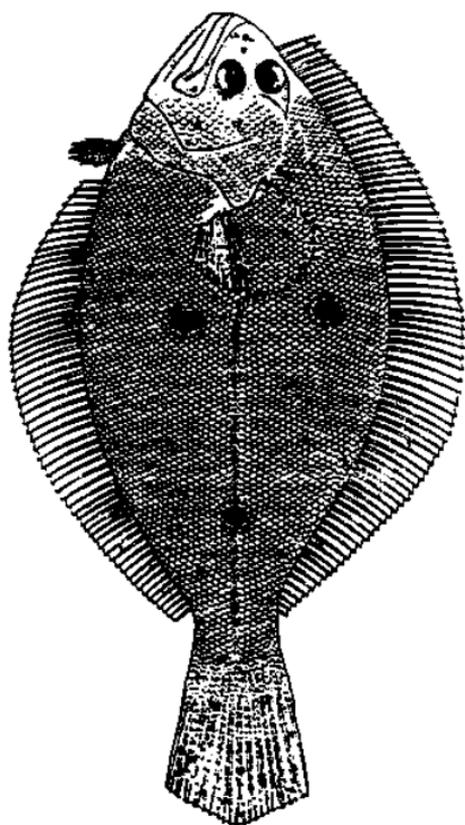


Figure 1. Gulf flounder, *Paralichthys albigutta*.

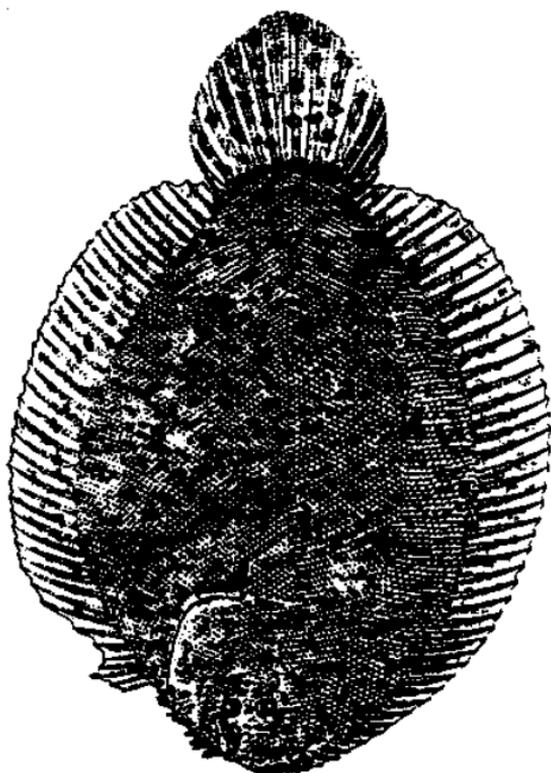


Figure 2. Lined sole, *Achirus lineatus*.

Table 1. Current Records Of Southern Flounder (*Paralichthys lethostigma*). The Record From Florida Is Also The World Record.

State	Size	Date	Angler
Texas	13 lb.	1976	H. Endicott
Louisiana	12 lb. 2 oz.	1969	C. Craig
Mississippi	9 lb. 15 oz.	1986	R. Sheldon
Alabama	13 lb. 3 oz.	1978	P. Melech
Florida	20 lb. 9 oz.	1983	L. Mungin

but soles are frequently caught in commercial or bait trawls. The lined sole (*Archirus lineatus*), is sometimes sold in aquarium stores as "fresh-water flounder" because of its ability to tolerate fresh or salt water (Figure 2). The tonguefish are also left-eyed flatfish but bear little resemblance to the Paralichthyidae. They are long, thin fish with one continuous fin around the whole fish except the head. An example of a tonguefish that is common along the northeastern Gulf is the blackcheek tonguefish (*Symphurus plagiusa*; Figure 3). Little is known about tonguefish and even the identification of adults has not been completely worked out.

Along the northern Gulf of Mexico the southern flounder is found in waters of lesser average depth compared to the Gulf flounder, and the southern flounder frequently occurs in low salinity or even fresh water. The Gulf flounder rarely enters waters of reduced salinities, and it is usually caught outside Mobile Bay.

The life history of the Gulf flounder is unknown, but the general aspects have been worked out for the southern flounder. Adult southern flounder migrate out of the bays and estuaries in the fall (Figure 4). An abrupt cold snap can trigger a massive migration. In a more gradual cooling the seaward migration is slower. Southern flounder begin to spawn either during this migration as they move out of the passes or farther out in the Gulf; the exact timing and locations are not fully understood. Research indicates that both southern and Gulf flounders attain sexual maturity at 2 years of age. The spawning takes place in the water column with

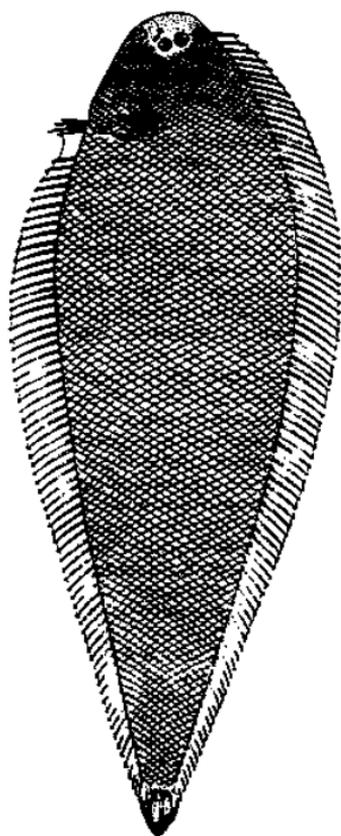


Figure 3. Blackcheek tonguefish, *Symphurus plagiusa*.

several females and a single attending male. Fecundity averages 40,000 eggs per female in the 2- to 6-pound range. Southern and Gulf flounder are external spawners with eggs and sperm released into the water column. Fertilized eggs float quickly to the surface. Eggs hatch in about 2 days, and young yolk-sac larvae are extremely vulnerable to predation and starvation. Somehow, it is not yet known how, a small percentage survive and make their way back to the estuary. During these early stages, flounder have the normal fish appearance, that is, with one eye on each side of the head, and they swim in the normal upright position. It is only after they reach the estuary that the eyes migrate to one side of the head, the flounder drop out of the water column, turn on their sides, and assume a bottom existence. This shoreward migration occurs between December and April. Once the estuary

begins to warm up in the spring, young fish grow rapidly as they take advantage of the abundant food sources available. Fish reach about 8 inches at the end of this first year (Figure 5). Whether or not these yearlings participate in the fall spawning migration is the subject of current research.

How large a particular species grows is usually of interest to anglers. The best way to answer this for southern flounder is to examine state and world records (Table 1). The current world record of 20 pounds, 9 ounces has held since 1983, so we think that southern flounder do not grow much bigger. Records have not been kept for other species, probably because they do not reach very large sizes. Currently there are no restrictions on the recreational catch of southern flounder in Alabama federal or state waters, but Florida has an 11-inch size limit.

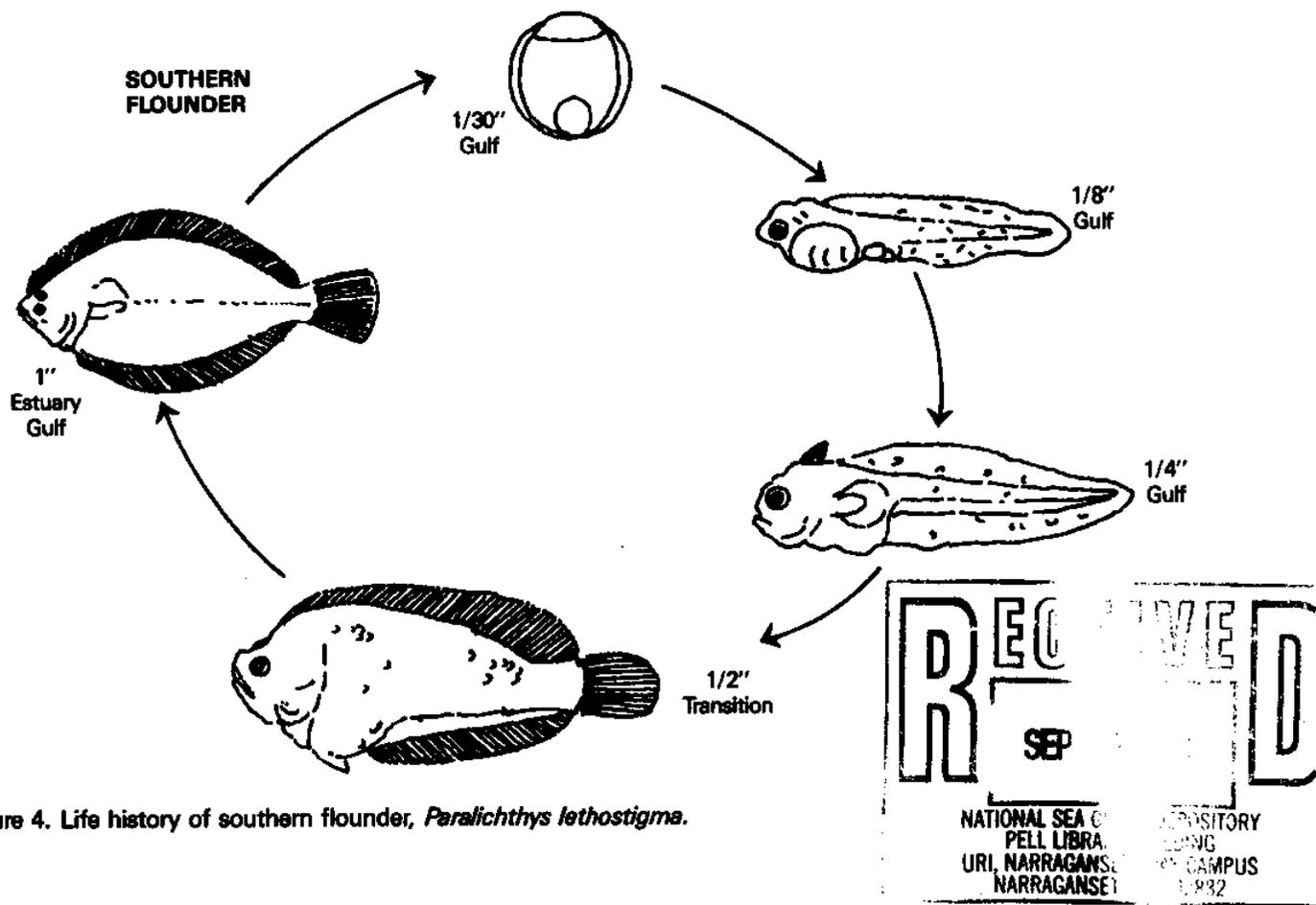


Figure 4. Life history of southern flounder, *Paralichthys lethostigma*.

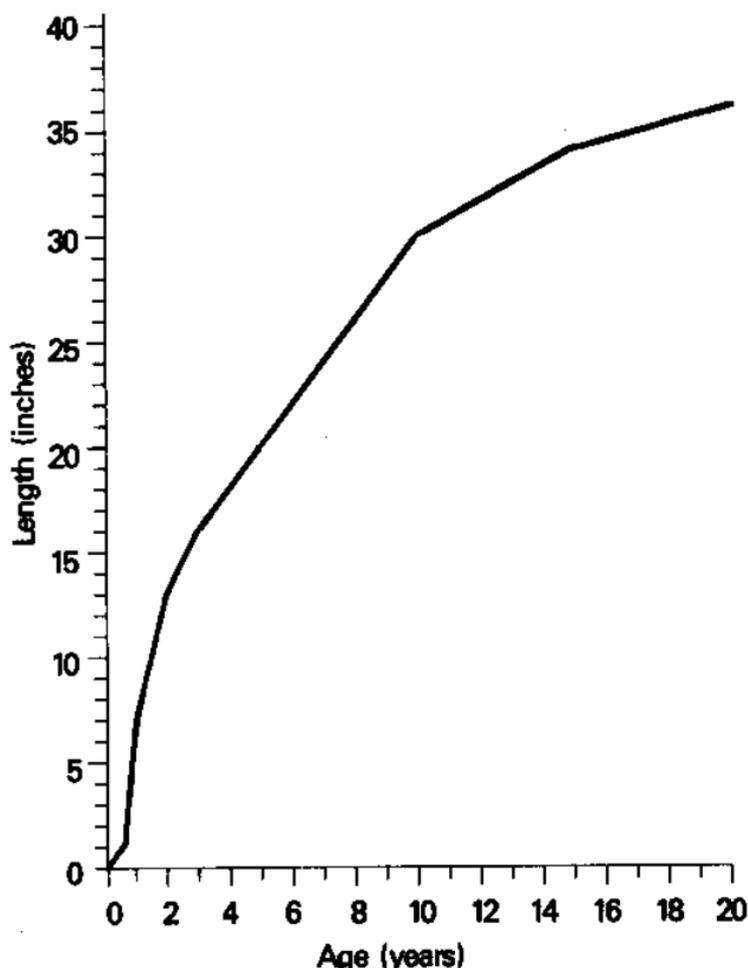


Figure 5. Age and growth of southern flounder, *Paralichthys lethostigma*.

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