The History of Blue Crab Harvest

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When you buy fresh crab meat in the market or order crab claws in a local restaurant, you are getting blue crab, *Callinectes sapidus*. Each year, Alabama's blue crab fishermen catch approximately 3.1 million pounds of crabs. Most crabs are cooked and sold both locally and nationally. A small number are marketed whole as soft-shelled crabs to restaurants along the Gulf Coast. Some crab shops specialize in processing crabmeat into a variety of items such as crab quiche, stuffed crab or crab cakes. Although Alabama ranks fourth among Gulf Coast states in pounds of crabs landed, Alabama crab shops import and process an estimated 60% of the Gulf of Mexico blue crab catch. This level of processing has made crabs the third most valued marine fishery in Alabama behind only shrimp and roe mullet. The dominance of crabmeat to the local market is a recent occurance and doesn't reflect the thousands of years that it served as subsistence level food for Native Americans and early settlers.

The blue crab ranges from Nova Scotia to Argentina, in brackish to oceanic water, relying heavily on estuaries to complete its life cycle. An estuary is any area where fresh water and salt water mix. Alabama's primary estuarine systems are Mobile Bay, Perdido Bay and the Mississippi Sound. This mixing of salt and fresh water creates an environment high in nutrients and extremely suitable for growth of many marine species. Estuarine marsh and grass beds provide extensive areas for blue crabs to hide from predators and remain safe during molting. A molting crab is one that has shed its external skeleton and is soft to the touch. Male crabs molt throughout their life although the frequency of molts decreases as they age. A female crab will molt several times during her first year but, at sexual maturity, she will have a final molt called ecdysis. Through pheromones in the water, a male can sense a female about to enter ecdysis. He will actively pursue her and will cradle her as she begins to molt. While she is soft, he will transfer a packet of spermatophores to her and continue to carry her until she hardens. The male then leaves to find another female but this is the female's only mating although she may have multiple spawnings from this single encounter.

After mating, most females head offshore toward deeper, saltier waters. Her first spawn will usually occur within two to five months after mating. She will then extrude her eggs onto her abdomen. Initially the eggs, or sponge, are a bright yellow*orange. As the larvae grow and utilize the yolk, the sponge darkens to black. Upon hatching the larvae, called zoea, look nothing like an adult crab and are found in offshore waters as plankton. They go through seven zoeal stages, none of which resemble the adult they will become. After their final zoeal stage, they take on another form called a megalope. The megalope begins to assume some adult blue crab characteristics. This is the initial stage that appears in coastal waters. Larvae reach estuarine waters by wind and tide action. Once in the estuary the surviving megalopae molt and become a first crabs, so called because they it finally resembles a typical crab.

Development from zoeal to first crab stage takes approximately 40 to 70 days. With luck, and the food and shelter available in the estuary, a blue crab will grow and molt until it reaches sexual maturity, usually within one year. The process then repeats itself. Legally caught crabs in Alabama must be five inches wide, about 1.5 years old, from point to point. This restriction is necessary because of population growth along the coast and subsequent increased pressure on the blue crab population. The size of the coastal population has only recently had considerable impact on the blue crab numbers. During prehistoric times, blue crabs were harvested for subsistence living. There is evidence suggesting Native Americans used spears to gig blue crabs in shallow water and may also have used simple traps. During colonial times, some settlers survived only because of their ability to catch blue crabs. As early as 1850, records exist that indicate a market for soft-shelled crabs on the East Coast of America.

A significant level of consumption must have been driving the demand for blue crabs there because in 1870 L. Cooper Dize patented the first toothless dredge for taking peelers or soft-shelled blue crabs. During this period, fishermen wading with scoop nets or 40 * 50 foot seines, harvested hard-shelled crabs. Crabs were also being landed in smaller quantities along the Gulf Coast. Gulf crab fishermen would wade out at night with a long-handled dip net and a lantern, towing a skiff or burlap sack to hold their catch. Some fishermen would use a drop net; a metal frame covered with netting with bait attached in the middle. This device would be lowered to the bottom to attract crabs to the bait. As the crabs fed on the bait, the frame would then be raised with the crab remaining in the net. You can often still see some recreational crab fishermen using this today.

The 1870's saw the evolution of a commercial crabbing industry. Railroads permitted rapid shipping of hard crabs away from the coast, The McMenamin Company of Hampton canned the first crabmeat, and wood rowboats fishing trotlines replaced seines and scoop nets as a means of catching crabs. Trotlines are a long main line anchored at both ends while short lines, called snoods, drops, stagings or ganglions, are baited and spaced approximately two feet apart. Bait choice varied by area and personal preference. Beef lips, beef ears and tripe were in great demand for their durability while salted eel was said to catch more male crabs. Crab fishermen set their line at night so no shadows would spook the crabs. Care would be taken so that the line was oriented properly as determined by the tide, season and geography of the area. Upon setting the line, the fisherman would pull his skiff downwind along the line and dip out feeding crabs with a long-handled dip net. With the availability in the early 1900s of motor boats, the use of the snoods was eliminated and the bait tied directly to the main line. This prevented the snoods from getting tangled in rollers extending out from the side of the boat. While trotlines remained the standard harvesting method in the Gulf into the 1950s, Benjamin F. Lewis patented the first crab trap as early as 1926. With minimal modifications, this trap resembled those currently in use. Traps are currently constructed of vinyl covered hexagonal mesh similar to chicken wire. The trap is box-shaped with several funnel-shaped entrances that force crabs to turn sideways to enter. The narrowness of the end of the funnel prevents them from exiting easily. Blue crabs are enticed to enter the trap by the presence of bait, typically menhaden, in an enclosed bait well within the trap. Menhaden are oily fish from the herring family and the oiliness is believed to aid in attracting crabs.

Currently 98-99% of all crabs caught come from crab traps with the remaining 1-2% caught in shrimp trawls. Even today, the crabbing industry continues to change. Traps with a sturdier square mesh are beginning to appear in local waters. Crabbing has long been a part of the human culture. As the human population has grown the industry has changed to become more efficient. This efficiency while a boon to crab fishermen must always be balanced by the need to sustain a viable blue crab population. Management of the crab industry is a must for sustaining blue crab harvest.