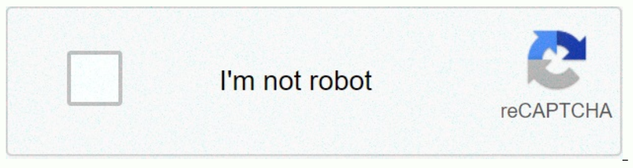

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Fish with long nose and teeth

Longnose Gar Lepisosteus osseus (Linnaeus, 1758) never fails to fascinate the observer of nature. Gars have many unique properties, which is unlike most other fish. They are easily distinguished by extremely long symps, numerous sharp teeth, a long cylindrical form of the body, bony scales and a shortened heterocercal tail. Along with Sturgeon, Paddlefish and Bowfin, some fish that existed more than 100 million years ago live. Say what? Yes, they have properties that have been present on ancenstral gars for over 100 million years! Longnose Gar captured in Virginia (photo by J.D. Schmitt) In Virginia, Longnose Gar is the only native Gar and is the most widespread species in North America. The name Lepisosteus comes from a combination of two words lepis the Greek word for scale, and osteos, which is Latin for bony. Similarly Lepidoptera is like insects, butterflies and moths, named for scale and Greek pterin for wing. In the case of Gars, the name is used to describe extremely hard ganoid scales. The specific epithet osseus is also Latin for the word bony. This is unnecessary, but you can not blame it on Linnaeus; Carolus Linneaus originally classified this fish as Esox osseus or Gar Pike. No other fish in Virginia has such a hard bony cover. Ganoid scales appeared at a time when very large jagged aquatic reptiles, large pliosaurs and relatives were still around. This bony covering is very difficult to break through even with a sharp filet knife. Each ganoid scale takes the form of a rhomboid and has an articular dorsal pin that articulates with a ventral joint on an adjacent, dorsally placed scale. Ganoid scales have a bony basal layer, a dentin layer and an outer layer of ganoin (inorganic bone salt). Ganoid scales in gar are firmly overlapping on all parts of the body creating a diamond-shaped pattern and a rather inflexible body form. Above: Side scales of Longnose Gar (photo: Uland Thomas. Down: Up close Longnose Gar scales (photo: DJ Orth) Gar's body form is a long flexible cylinder, not designed for permanent swimming. Dorsal and fins are both set both back on the body, and with a large rounded tail fin that provides stability during the tail stroke. Gar is an overflow predator that sits and waits motionless until potential prey are close by. With a quick tail thrust andhead sweep the pyke prey fish in their long jagged mouth. Longnose Gar relies more on the speed of lateral movement, rather than biting the phopped prey of the fish; There is very little biting force on the tip of his jaw. A recent diet study on Longnose Gar in the port of Charleston and the associated mouth of South Carolina confirmed that adults are opportunistic In this dominant location in the diet were Atlantic Menhaden, shadow, drum, killifishes, mullet, and Penaeid shrimp. In virginia tidal populations, the top five prey consumed by longnose gar adults were White Perch, Menhaden, Fundulus spp., Atlantic Croaker and Spot. Longnose Gar is easily distinguishable from the other gars of his long, narrow snout. The length of the suppest shall be more than 13 times its narrowest width in samples 50 mm in length or more. The cubs have a shorter snout that grows proportionally faster than the body. Other types of gar can distinguish the shape of the suppest and pigment patterns. The spots on Longnose Gar's body are smaller and generally less well developed than those on Spotted Gar. Gars have a bimodal system for breathing. They can get oxygen through gills or air breathing. The lungs are highly vascular and homologous to the tetrapod lung. It takes up 10% of the volume of fish. It's the use of bimodal breathing that allows Longnose Gar to be successful in many low oxygen waters that would otherwise be inhospitable. Yet in hypoxic (low oxygen) conditions they can continue with normal levels of activity as they rely on breathing through the air. As a result, they are widely dispersed in lowland lakes, rivers and streams of the Atlantic and Persian slopes, and throughout the Mississippi River and the lower Great Lakes basins. Distribution longnose gar (Source: U.S. Geological Survey) Longnose Gar are mainly freshwater fish; However, they were captured in tidal rivers with a maximum saltiness of up to 15-21 ppt. In some studies, they seem to move considerable distances. There also tends to spring movement on smaller tributary for friction. Don't eat Gar eggs! Unlike Paddlefish, Sturgeon and Bowfin, Gars eggs are not used for caviar. In fact, they are highly toxic to mammals and birds, but not fish. This remains an unsolved mystery. One assumes that fish would be the primary source of predation for Gar eggs, but this egg toxin does not deter fish from eating eggs. Why develop mammal-specific egg toxin? Many authors suggest that there is no sexual dimorphism in Longnose Gar other than women are greater than men. However, Long and Ballard, in longnose gar breeding collections, reported that adult females possessed silvery body coloring, while men had a golden cast at their weight. Patrick McGrath analysed the morphometry of male and female Longnose Gar and showed that males had a longer base of fins and wider heads and middle snippet than females. Longnose Gar can multiply in relatively barren shores or in quiet vegetated habitats. Longnose Female reproduces with one to several males who use their snout to pouch and position the female, followed simultaneously eggs and sperm. Gar lay sticky eggs at the bottom, often in coves on submerged vegetation. Dark eggs are about 3mm in diameter and toxic to humans to eat. It can hatch in 6 days at temperatures between 18-20C. By day four the embryo still has a large yolk bag and has developed an adhesive organ on its head. The adhesive organ is larger than the embryonic eye. At the time of hatching and absorption of the yolk sacu, the size of the eye is greater than the adhesive organ. The adhesive organ on the head helps the embryo to attach to vegetation and other structures where they hang vertically. They lose the adhesive organ when the snout and mouth is fully formed and feeding can begin. Above: Drawings into two stages of the Longnose Gar larvae with (left) and without the (right) adhesive organ. Below: A photo of Gar larvae with an adhesive organ. (Source). The smallest chicks look very different from adults. The little cubs have a long side stripe, a shorter snout, and a long caudal ray fiber. At this stage, Longnose Gar are surface feeding on copepods, cladocerans, and aquatic insects before making the transition to fish. Longnose Gar are not classified as game; However, in recent decades they have begun to acquire a specialized following. Texas State Record Longnose Gar was a 50 pound 5 ounce specimen taken from trinity river in 1954. Longnose Gar is a special invitation for a keen fisherman. However, this specialized fish is best watched with specialized fishing technique. You just don't want to insert a treble hook into Gar's bony jaw. Neither you nor Gar will be happy with the result. One alternative technique is to use rope lure. With this method, the uncoated rope tangles in the teeth when Gar attacks the bait. Rope bait used specifically to target Gars (source) Also, bowfishers have always known that Gars are a suitable target because they lie motionless near the water surface - easy targets for accurate bowfisher. While bowfishers have quietly targeted Gars for sport and casual food, lately bowfishing tournaments have become popular. And the tournaments have raised an ethical dilemma in terms of harvest and subsequent waste of the original Gars. We'll see if tournament organizers treat Longnose Gar and other Gars differently in future tournaments. Jason Emmel with Longnose Gar bowfished in Virginia. (Photo: JD Schmitt) Can I eat them? Yes, but it takes a completely different approach to cleaning. First, attach the head and tail to the plate. Then you can use sharpened tin clippings to cut through the scale of the jacket directly along the spine to the tail. This reveals two strips of white meat. The meat is solid and has a color and texture that resembles a chicken or alligator more flaky fish fillet. Gar fillets can be dredged in batter and fried in hot oil. For more information about catching, cleaning, and eating gars, watch this video. Fossil Gars have been found in North America, South America, Africa, India and Europe, although the origins of this group remain highly uncertain. Perhaps the ancestors of Lepisosteiform fish originated before or during the cameo, which began 145 million years ago. This ant fish originated in the late Jurassic before the disintegration of the supercontinent Pangea. Gars's closest relatives are Bowfin (Amia calva). The latest phylogenetic analyses support the hypothesis that the two groups have a common ovary and form a basal sister group (Holostei) for all other bony fish (Teleostei). Longnose Gar has been largely ignored in the development of fisheries management programmes. Although other Gars (Alligator Gars and Tropical Gars) are declining in many areas, there is little focused effort to monitor the state of Longnose Gar's population in its entirety. There are no estimates for the sport or commercial harvest and the impact on the population. Scales can be used as darts from Native Americans. Some craftsmen use Gar scales to make earrings. If you are interested in more information about the Lepisosteidae family, Gars, then check out this website now!