

## = Leopard catshark =

The leopard catshark ( *Poroderma pantherinum* ) is a species of catshark , and part of the family Scyliorhinidae , endemic to the coastal waters of South Africa . Abundant in inshore waters under 20 m ( 66 ft ) deep , this bottom @-@ dweller favors rocky reefs , kelp beds , and sandy flats . Growing to a length of 84 cm ( 33 in ) , the leopard catshark has a stout body with two dorsal fins placed well back , and a short head and tail . It is extremely variable in color and pattern , with individuals ranging from almost white to black and covered by diverse patterns of black spots , blotches , rosettes , and / or lines . The color pattern changes with age and some forms seem to be location @-@ specific , suggesting the presence of multiple distinct , local populations . In the past , some of the more distinct color forms have been described as different species .

Mainly nocturnal in habits , after dusk the leopard catshark hunts for small , benthic bony fishes and invertebrates in shallow water . In daytime , it generally rests inside caves and crevices , sometimes in groups . This species has been documented ambushing spawning chokka squid ( *Loligo vulgaris reynaudi* ) within their spawning grounds . Reproduction is oviparous and proceeds year @-@ round . Females produce rectangular , light @-@ colored egg capsules two at a time , attaching them to structures on the sea floor . Small and harmless , the leopard catshark adapts well to captivity and is often exhibited in public aquariums . It is caught by commercial and recreational fishers as bycatch , and often killed as a pest . The International Union for Conservation of Nature ( IUCN ) has listed this species as Data Deficient ; its numbers do not seem to be declining , but heavy human activity occurs within its native waters . The possibly fragmented nature of its distribution also merits caution for each local population .

## = Taxonomy =

Because of its highly variable color pattern , the leopard catshark has historically been known under a multitude of names . In an 1837 issue of Proceedings of the Zoological Society of London , Scottish physician and zoologist Andrew Smith listed without descriptions the new genus *Poroderma* , containing the species *P. africanum* ( the pyjama shark ) , *P. pantherinum* , *P. submaculatum* , and *P. variegatum* . German biologists Johannes Peter Müller and Friedrich Gustav Jakob Henle assigned these sharks to the genus *Scyllium* , and in their 1838 ? 1841 *Systematische Beschreibung der Plagiostomen* furnished descriptions for *S. pantherinum* and *S. variegatum* , and listed two more names without description , *S. leopardinum* and *S. maeandrinum* . In 1934 , American zoologist Henry Weed Fowler described *P. marleyi* , characterized by large black spots .

Subsequent authors have recognized these names as based on pattern variants of the leopard catshark ; resolving the identity of *P. marleyi* proved especially problematic and it was not confirmed to be a synonym of this species until 2003 . The valid scientific name of the leopard catshark is considered to be *Poroderma pantherinum* , attributed to Müller and Henle as they were responsible for the description . The specific epithet *pantherinum* refers to the panther @-@ like patterning of the type specimen , a 65 cm ( 26 in ) long female collected off the Cape of Good Hope . Other common names for this shark include barbeled catshark and blackspotted catshark .

## = Distribution and habitat =

The leopard catshark inhabits the temperate and subtropical inshore waters off South Africa , from Saldanha Bay in the west to the mouth of the Tugela River in the east . There are old and almost certainly erroneous records from Mauritius and Madagascar . Given the color pattern diversity within the species , its range is likely fragmented into a number of small local populations along the South African coast . Bottom @-@ dwelling in nature , the leopard catshark is most commonly encountered from the intertidal zone to a depth of 20 m ( 66 ft ) , though it has been reported from as deep as 256 m ( 840 ft ) on the uppermost portion of the continental slope . This species favors rocky reefs , kelp forests , and sandy flats off beaches .

## = = Description = =

The leopard catshark is the smaller and slimmer of the two *Poroderma* species . The head and snout are short and slightly flattened , with a somewhat pointed snout tip . Each nostril is split into tiny incurrent and excurrent openings by a three @-@ lobed flap of skin in front , of which the central lobe forms a slender barbel that reaches past the mouth . The horizontally oval eyes are equipped with rudimentary nictitating membranes ( protective third eyelids ) and placed rather high on the head , with a thick ridge running under each . The mouth is wide and arched , with short furrows at the corners extending onto both jaws ; the upper teeth are exposed when the mouth is closed . There are 18 ? 30 and 13 ? 26 tooth rows on either side of the upper and lower jaws respectively . The teeth have a narrow central cusp with a pair of small lateral cusplets ; those of adult males are slightly more curved than those of females .

The body is rather laterally compressed and tapers towards the tail , with two dorsal fins set far back . The first dorsal fin originates over the rear of the pelvic fins and is much larger than the second , which originates over the midpoint of the anal fin base . The bases of the pectoral and pelvic fins are about equal ; the pectoral fins are large and broad while the pelvic fins are much lower . Adult males have stubby claspers with the inner margins of the pelvic fins partially fused over them to form an " apron " . The caudal fin is short and broad , with an indistinct lower lobe and a ventral notch near the tip of the upper lobe . The very thick skin is covered by well @-@ calcified dermal denticles . Each denticle has an arrowhead @-@ shaped crown with three posterior points , mounted on a short stalk .

The background color of the leopard catshark ranges from off @-@ white to glossy jet black above and white to almost black below , sometimes with an abrupt transition between the two . Overlaid is a striking pattern of black markings variously combining small to large spots , blotches , complete to incomplete rosettes , and / or short to long lines , that may extend almost to the midline of the belly . There are four named forms : ' typical ' , with leopard @-@ like rosettes and broken lines , ' marleyi ' , with large round spots , ' salt and pepper ' , with densely packed dots , and ' melanistic ' , with an almost completely black upper surface and irregular stripes and / or spots ; many sharks are intermediate between these forms . Color pattern is affected by development : all hatchling sharks have large black spots , that with age tend to break up into rosettes and smaller spots , that may eventually merge into lines . The ' marleyi ' form appears to be a type of paedomorphosis , in which in the hatchling pattern is carried into adulthood . Color pattern is also related to geographic location , with the ' marleyi ' and ' salt and pepper ' forms apparently restricted to the waters off the Eastern Cape and KwaZulu @-@ Natal . The leopard catshark reaches a maximum known length of 84 cm ( 33 in ) and a maximum known weight of 3 @.@ 2 kg ( 7 @.@ 1 lb ) ; males grow slightly larger than females .

## = = Biology and ecology = =

The slow @-@ swimming leopard catshark generally spends the day resting inside caves or crevices , either alone or in groups . At night , it moves towards the shore to actively forage for small bony fishes , cephalopods , crustaceans , and polychaete worms . In False Bay , fishes are the most important prey type , followed by cephalopods and then the Cape rock lobster ( *Jasus lalandii* ) . This shark has been observed attacking octopus and cuttlefish by seizing and tearing off tentacles with a twisting motion . Like its close relative the pyjama shark , it will temporarily abandon its nocturnal habits to take advantage of the daytime mass spawnings of the chokka squid ( *Loligo vulgaris reynaudi* ) , which occur unpredictably year @-@ round with a peak from October to December . The sharks lie motionless amongst the squids ' egg masses with their heads hidden , and make sudden lunges at female squid that have descended to the sea floor to attach their eggs .

The leopard catshark is oviparous and apparently reproduces throughout the year . Females produce two eggs at a time , one within each oviduct . Each egg is protected by a rectangular capsule 7 cm ( 2 @.@ 8 in ) long and 3 cm ( 1 @.@ 2 in ) across , which is light brown to olive in color and thinner @-@ walled than those of the pyjama shark . The corners of the capsule bear long

tendrils that enable the female to secure them to underwater structures . In the aquarium , the eggs hatch in approximately five and a half months . The hatchling shark measures 11 cm ( 4 @. @ 3 in ) long ; males and females begin to mature sexually at 47 ? 67 cm ( 19 ? 26 in ) and 43 ? 64 cm ( 17 ? 25 in ) long respectively , corresponding to an age of around 10 years . One source reports the maximum lifespan as at least 15 years , while another source gives at least 19 years .

Predators of the leopard catshark include larger sharks and marine mammals ; it is one of the cartilaginous fish most often consumed by the broadnose sevengill shark ( *Notorynchus cepedianus* ) . When threatened , it curls into a ring with its tail covering its head , a behavior also performed by the shysharks ( *Haploblepharus* ) . Its eggs are also heavily preyed upon , by animals such as the whelks *Burnupena papyracea* and *B. lagenaria* , which can pierce the outer covering to extract the yolk . This species is known to be parasitized by the praniza larvae of the isopod *Gnathia pantherina* , which infest the nostrils , mouth , and gills .

= = Human interactions = =

Quite common within its range , the leopard catshark is harmless to humans . It is a popular subject of public aquariums because of its small size , attractive appearance , and hardiness . The aquarium trade supports a minor fishery that targets the two *Poroderma* species . This shark is regularly caught incidentally by commercial and recreational fishers , and almost invariably discarded despite being edible . Nevertheless , fishing mortality is likely to be high as many fishers using line gear make a point to kill hooked sharks , seeing them as pests that " steal " bait . The International Union for Conservation of Nature ( IUCN ) presently lacks sufficient information to assess the leopard catshark beyond Data Deficient , though notes that its inshore habitat is heavily fished and otherwise impacted by human activity . The possible distribution of this shark across many small , distinct populations also warrants additional investigation and monitoring .