

Fossil Teeth

Sandtiger Shark *Carcharias* spp.

- long, slender, smooth-edged blade
- small, secondary cusplet on either side of main blade
- strongly bilobed root
- large lingual protuberance (bulge) and nutrient groove at center of root

Many 'species' have been named, but the fossil teeth are difficult to distinguish from one another as well as similar genera, such as *Odontaspis* and *Striatolamna*.



Paleocarcharodon Orientalis

- broadly triangular, thin, coarsely serrated blade
- large, complex secondary cusplets
- no prominent lingual protuberance at center of root
- tapered basal groove between blade and root
- strongly bilobed root with U-shaped notch at center

Considered by some to be the earliest member of the genus *Carcharodon*, *P. orientalis* seems to be a short-lived evolutionary dead-end in no direct way related to the modern White Shark.



Parotodus Benedeni

- stout, robust, smooth-edged blade
- no secondary cusplets
- prominent lingual protuberance at center of root
- strongly bilobed root

A poorly known species of uncertain affinities; this specimen is from Nova Scotia, Canada



Otodus Obliquus

- triangular robust, smooth-edged blade
- stout secondary cusplets on either side of main blade
- strongly bilobed root
- large lingual protruberance and nutrient groove at center of root

A direct ancestor of Megalodon (*Carcharocles megalodon*); most commercially sold specimens come from Morocco



Carcharocles Auriculatus

- triangular, thick, finely serrated blade
- prominent secondary cusplets
- broad chevron (enameloid-free scar) between blade and root
- root strongly bilobed

Resembles a serrated *Otodus obliquus* and was, until recently, sometimes classified as *Otodus subserratus*.



Carcharocles Chubutensis

- broadly triangular, thick, finely serrated blade
- small to subtle secondary cusplets
- broad chevron (enameloid-free scar) between blade and root
- root strongly bilobed

Like other *Carcharocles*, *C. chubutensis* is probably best regarded as a chronomorph rather than a biologically discrete species. The numerous subtle variations between *C. auriculatus* and *C. megalodon* represent a continuum of evolution within a single world-wide species.



Carcharocles Megalodon

- very broadly triangular, thick, finely serrated blade
- no secondary cusplets
- broad chevron (enameloid-free scar) between blade and root
- root strongly bilobed

Most commercial specimens come from the Cooper River in North Carolina and are greyish-black (eg: the specimen on the right); large specimens are becoming scarce



Cosmopolitodus Planus

- broadly triangular, flattened, unserrated blade
- no secondary cusplets
- narrow basal scar between root and blade
- no lingual protruberence on root
- cusp of main blade strongly curved at tip
- blade overhangs the root markedly



Cosmopolitodus Hastalis

- broadly triangular, flattened, unserrated blade
- no secondary cusplets
- narrow basal scar between root and blade
- no lingual protruberence on root
- cusp of main blade NOT strongly curved at tip
- blade does NOT overhang the root markedly

A direct ancestor of the modern White Shark (*Carcharodon carcharias*)



White Shark Carcharodon Carcharias

- broadly triangular, flattened, coarsely serrated blades
- serrae are irregular in size and spacing, a feature which helps distinguish teeth of this species from triangular and serrated toothed whaler sharks, such as the Oceanic Whitetip (*Carcharhinus longimanus*)
- narrow scar separating blade from root
- strongly bilobed root, especially in anterior lower teeth



Squalicorax Pristodontus

- broad, flattened, serrated blade
- blade strongly convex on leading edge
- blade distinctly angled on trailing edge
- root extremely flattened, almost lacy
- root with shallow U-shaped notch at center

Teeth of this species are functionally similar to those of the Tiger Shark (*Galeocerdo cuvier*)



Hemipristis Serra

- falcate, flattened, strongly serrated blade
- no serrae on very tip of blade
- base of blade often ridged longitudinally (lengthwise)
- squared-off root
- thick lingual protruberance at center of root flanking nutritive groove

Represented today by the Snaggletooth Shark (*Hemipristis elongatus*)



Tiger Sharks Galeocerdo Contortus

- deeply-notched, flattened blade with strong serrations at shoulders (near the base) of blade, especially on inner margin
- main cusp angular rather than smoothly curved (as in *G. cuvier*)
- blade height up to twice root breadth



Closely related to the modern Tiger Shark (*Galeocerdo cuvier*)

Tiger Sharks Galeocerdo Cuvier

- deeply-notched, flattened blade with strong serrations at shoulders of blade, especially on inner margin
- main cusp smoothly curved (unlike *G. contortus*)
- blade height about equal to root breadth



One of the most beautifully-shaped of shark teeth, remarkably similar to those from modern specimens

Dusky Shark *Carcharhinus Obscurus*

- oblique, flattened blade with broad serrated shoulders tapering to narrow apex
- serrations decreasing in size toward tip of blade
- squared-off root

The teeth of various fossil species of whaler (grey) sharks can be very difficult to distinguish; it is probably best to regard all identifications as highly provisional.



Bull Shark *Carcharhinus Leucas*

- broad, flattened, serrated blade tapering to narrow apex
- serrations decreasing in size toward tip of blade
- squared-off root

The teeth of various fossil species of whaler (grey) sharks can be very difficult to distinguish; it is probably best to regard all identifications as highly provisional.



Oceanic Whitetip Shark *Carcharhinus Longimanus*

- broadly triangular, flattened, serrated blade, superficially similar to that of a White Shark (*Carcharodon carcharias*)
- serrations decreasing in size toward tip of blade
- squared-off root

The teeth of various fossil species of whaler (grey) sharks of the genus *Carcharhinus* can be very difficult to distinguish; it is probably best to regard all identifications as highly provisional.



Lemon Shark *Negaprion Brevirostris*

- narrow, flattened, unserrated blade
- blade erect to slightly oblique
- base of blade with broad 'shoulders'
- squared-off root

Fossil teeth of this species are remarkably similar to the teeth from modern specimens

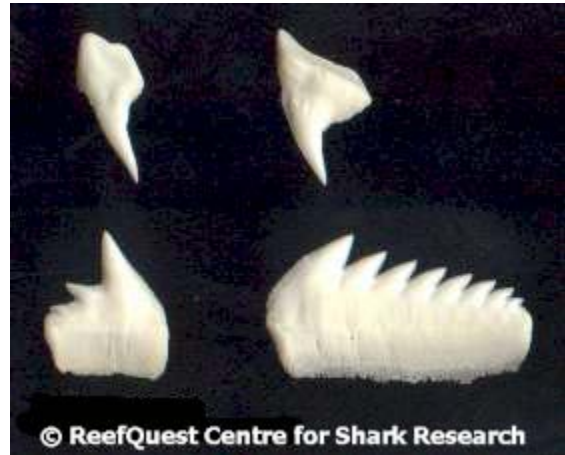


Recent Teeth

Sixgill Shark *Hexanchus Griseus*

- lower anterior teeth comb-like, each with an elongated base and multiple cusps
- bases of lower teeth thin and lacy
- upper teeth spike- or hook-like
- bases of upper teeth knob-like

Among the most fascinating of modern shark teeth; all hexanchiform sharks show pronounced sexual dimorphism in the anterior lower teeth, with mature males having an initial cusp much higher than subsequent ones.



Sandtiger Shark *Carcharias Taurus*

- long, slender, smooth-edged blade
- small, secondary cusplet on either side of main blade
- strongly bilobed root
- large lingual protruberance (bulge) and nutrient groove at center of root

Specimens from southeastern Australia have consistently stouter dentition, leading to speculation that the Aussie Grey Nurse Shark is a distinct species or sub-species.



White Shark *Carcharodon Carcharias*

- broadly triangular, flattened, coarsely serrated blades
- serrae are irregular in size and spacing, a feature which helps distinguish teeth of this species from triangular and serrated toothed whaler sharks, such as the Oceanic Whitetip (*Carcharhinus longimanus*)
- narrow scar separating blade from root
- strongly bilobed root, especially in anterior lower teeth

The most famous of all shark teeth, those from a large White Shark can command significant prices — a fact which renders this relatively uncommon species a target for trophy hunters.



Shortfin Mako *Isurus Oxyrinchus*

- anterior upper teeth slender, knife-like and unserrated
- anterior lower teeth slender, recurved, and unserrated
- narrow scar separating blade from root
- strongly bilobed root, especially in anterior lower teeth

Teeth of this species were once used as currency by New Zealand Maoris; the Shortfin Mako is considered the premiere gamefish among sharks.



Tiger Sharks *Galeocerdo Cuvier*

- deeply-notched, flattened blade with strong serrations at shoulders of blade, especially on inner margin
- main cusp smoothly curved
- blade height about equal to root breadth
- teeth alike in both jaws

One of the most beautifully-shaped of shark teeth; combines powerful puncturing capability (afforded by the deep primary notch) and efficient ripping (afforded by the large serrae on inner shoulder) — "can opener" dentition is ideally suited to tearing through the tough carapace of sea turtles.



Bull Shark *Carcharhinus Leucas*

- broad, flattened, serrated blade tapering to narrow apex
- serrations decreasing in size toward tip of blade
- squared-off root

The teeth of various species of whaler (grey) sharks can be very difficult to distinguish; it is probably best to regard all identifications as highly provisional.



Lemon Shark *Negaprion brevirostris*

- narrow, flattened, unserrated blade
- blade erect to slightly oblique
- squared-off root

Fossil teeth of this species are remarkably similar to the teeth from modern specimens.



Great Hammerhead Shark *Sphyna Mokarran*

- oblique, flattened blade with broad serrated shoulders tapering to narrow apex
- serrations consistent in size from shoulders to tip of blade
- squared-off root

The teeth of various species of hammerheads can be very difficult to distinguish; it is probably best to regard all identifications as highly provisional.

