

INDEPENDENT FIELD GUIDE · CAPE FEAR RIVER

Shark Tooth Island Field Guide

An expedition logbook for the Cape Fear River

LOCATION 34.1175° N, 77.9306° W	**DATE** _____
COUNTY NEW HANOVER, NC	**LOW TIDE** _____
SUBJECT FOSSIL SHARK TEETH	**OBSERVER** _____

WELCOME TO THE ISLAND

A small island with a deep past.

Shark Tooth Island is a small island in the Cape Fear River near Wilmington, North Carolina, just upriver of Keg Island. At low tide its shoreline gives up fossil shark teeth from oceans that disappeared millions of years ago.

THE FIRST PRINCIPLE

Leave the island better than you found it.

Pack out everything you bring, take loose teeth and not the shoreline, and stay out of posted nesting areas.

The fossils are ancient. The island is newer.

Federal work on the lower Cape Fear began in 1870, and a 12-foot channel was dredged to Wilmington by 1876. Later dredging piled sediment beside the channel and built the river's spoil islands. Shark Tooth Island is one of the newer ones: it isn't on a 1966 chart, and it shows up in aerial photos from April 1969.

Near the island the channel is cut into Castle Hayne limestone, roughly 38 to 50 million years old. Most of the teeth come from sharks that lived in the Miocene and Pliocene. You're standing on a landscape shaped by modern dredging, searching for an ancient sea.

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OFFICIAL RECORD

Owned by the State of North Carolina. New Hanover County lists it as parcel R07800-001-001-000, "Shark Tooth Island, Cape Fear River" (about 7.9 acres).

GETTING THERE

Launch at River Road Park. Land in the east-side cove.

The launch. River Road Park, 6500 River Rd, Wilmington. Open 8 a.m. to sunset, no overnight parking. Parking is free and there are restrooms. The lot isn't huge, but you can usually get a spot.

The paddle. About 0.4 miles northwest across the Cape Fear River, roughly 15 to 20 minutes at an easy pace in calm water.

Where to land. Aim for the small cove on the east side of the island. It keeps the island between you and the shipping channel.

Boat, kayak or paddleboard only. There's no bridge, no ferry and no way to walk there, at any tide.

SAFETY FIRST · BEFORE YOU GO

The river is working water, not a swim beach.

The lower Cape Fear is a federally maintained shipping channel with strong tidal currents, commercial traffic and water you can't see through. Plan the trip, not just the hunt.

- ☐ **Wear a PFD.** NC law requires one per person; kids under 13 must wear one underway.
- ☐ **Paddle with a buddy.** Weather turns fast, and ships come up quicker than you'd think.
- ☐ **Leave a float plan.** Tell someone your launch, route and time back.
- ☐ **Check tides and wind.** Wind against the tide stacks up waves fast.
- ☐ **Watch for ship wake.** Give the channel distance and brace for wakes.
- ☐ **Never swim the channel.** Current and traffic are unforgiving.
- ☐ **Cold months (Nov to Apr):** dress for the water, not the air.
- ☐ **If it looks rough from the ramp,** it's worse in the channel.

911
Someone in the water, capsized, hurt or missing.

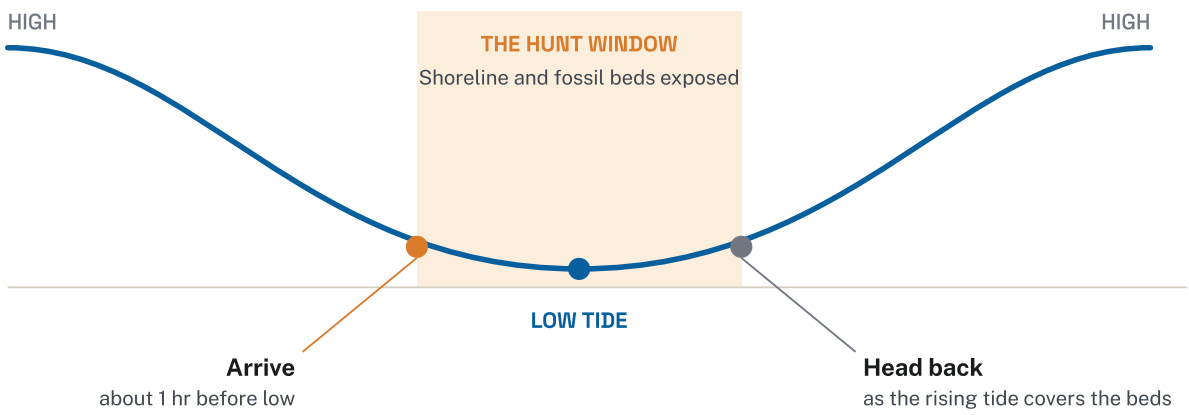
910-343-3882
Coast Guard Sector North Carolina, 24 hours.

VHF 16
Marine radio distress and hailing channel.

TIME THE TIDE

Schedule around low tide, not convenience.

The best hunting is right at the waterline, and that line moves. Arrive about an hour before low tide, while the water is still dropping and the shell and gravel beds are coming out of the river.



Use river tides, not beach tides

Cape Fear River tide times can run hours apart from the ocean beaches. Allow 3 to 4 hours for a real hunt. Rising water buries what you haven't found yet, so start early in the window, not at the bottom of it.

Check before you load the boat

The Hunt Planner at **SharkToothIsland.org** scores the next seven days on NOAA river tides and the forecast, and shows each day's best window.

WHAT TO BRING

Pack light, but pack these.

- [ ] **Water shoes or old sneakers.** Jagged rock and shell line the shore.
- [ ] **A life jacket for everyone.**
- [ ] **Bug spray.** The shady interior can be the buggiest part.
- [ ] **A trash bag.** For yours, and one thing that isn't.
- [ ] **A mesh sifter.** An old colander works.
- [ ] **A small dry bag** for your phone and finds.
- [ ] **More water than you think you need.**
- [ ] **This guide** and a pencil for the field log.

Scoop. Sift. Scan.

Finding fossil teeth is more of a filtering skill than a search skill. The teeth are there. The trick is sorting them out from the shell, the pebbles and the noise.

STEP 1

Scoop

Take from the darker waterline material, shell beds and low pockets, where heavier material settles.

STEP 2

Sift

Dip the sifter in the river. Sand, silt and light shell wash through. What's left is the heavy pile, where teeth end up.

STEP 3

Scan

Most teeth are black, gray or dark brown; shell is usually lighter. Look for dense triangles with a smooth surface. Pick things up; weight is a tell.



The shell and gravel beds at low tide. Photo: Rob Silliman

Where on the shoreline

- **The waterline at low tide.** The single most productive strip. Work back and forth along the edge.
- **Dark shell beds.** Banded, black-heavy material means stop and sift. Plain tan sand means keep moving.
- **Pockets and low spots** where water pools and drains.

What beginners miss

- **Slow down.** Search one small patch until you're sure it's empty, then move.
- **The small stuff.** Most teeth are small, and finding them trains your eye for bigger ones.
- **Pick it up.** Most identification happens in your hand, not from three feet above.

Mostly small teeth. And that's normal.

Most teeth on Shark Tooth Island are small, often smaller than a fingernail, and a handful makes a good day. Count anything over an inch as a great one.

Why most teeth are small

Small sharks always far outnumbered big ones, and every shark sheds thousands of teeth in its life, so small teeth were always the common find. A popular, easy-to-reach island also gets its big, obvious teeth picked up first.

The big ones are rare

Megalodon and large great white teeth do turn up, usually as broken pieces or small juvenile teeth. The hunters who find them come back often, go at the lowest tides and sift.

What a real tooth looks like

CLUE	WHAT TO LOOK FOR
Color	Black, gray-black or dark brown, all the way through. Shell is usually lighter on a broken edge.
Shape	A triangle with a crown and a distinct root. Some, like tiger shark, are hooked or notched.
Surface	The crown is smooth and slightly glossy enamel. The root is more porous and matte.
Weight	Dense, heavy for its size. If it feels like it should weigh more than it does, it probably does.
Serrations	Some species (great white, megalodon, tiger) have saw-like edges. Others, like mako, don't. Serrations on a dark triangle are a strong sign.

Not sure what you found?

Send two photos (front and back) with a coin for scale to **Tooth ID at SharkToothIsland.org**. We look at every find ourselves and email you our best guess at what it is and how big the shark was.

FIELD TEST

Fossil or shell?

The most common identification moment on the island. If something matches the fossil column on four or five of these, it's almost certainly a tooth.

	FOSSIL SHARK TOOTH	SHELL FRAGMENT
Color	Black, gray-black or dark brown, the same through a broken edge.	Tan, white, beige or mottled, often brighter on the broken edge.
Surface	Smooth, slightly glossy crown; matte, porous root.	Shiny like mother-of-pearl or chalky, often with growth ridges.
Weight	Dense. Feels like a small stone.	Light. Feels about how it looks.
Shape	Triangular or tongue-shaped, with a crown and a root.	Irregular. No root, no symmetric profile.
Edges	Smooth or serrated, but solid. No layers.	Layered, like pages of a book. A dead giveaway.

The five-second test

1. **Weight.** Heavy for its size? If not, it's probably shell.
2. **Edge.** Layers stacked like pages? That's shell.
3. **Structure.** A smooth crown and a porous root? Teeth have both.
4. **Color through.** Dark outside but white inside is shell.
5. **Serrations.** Fine, regular saw edges mean shark tooth.

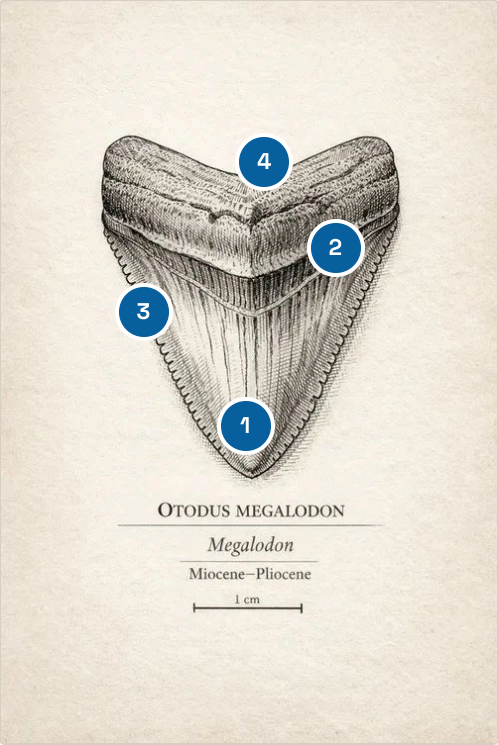
Common false alarms

- **Dark, weathered clam or oyster pieces.** The edge test catches them.
- **Sharp dark rock chips.** No root, ever.
- **Fossil bone.** A real find, just not a tooth. Spongier, with no crown.

Still unsure? Keep it, photograph it next to a coin, and ask later.

Name the parts, narrow the species.

Most shark teeth share the same basic build. What separates one species from another usually comes down to whether a few features are there, and what shape they take.



1. **Crown, the blade**
   The smooth, enameled cutting surface. Its shape (triangular, curved, hooked) is one of the fastest clues.

2. **Bourlette, the dark band**
   A chevron-shaped band between crown and root. Megalodon has one; great white doesn't.

3. **Serrations, the saw edge**
   Fine and regular on megalodon, coarser on great white, large and coarse on snaggletooth, absent on mako.

4. **Root, the base**
   Porous and matte, often V-shaped, usually lighter than the crown. Deeply forked roots suggest big predators.

5. **Cusplets, the side teeth**
   Small mini-teeth at the base of the blade on some species, like sand tiger. Juvenile megalodon can have them.

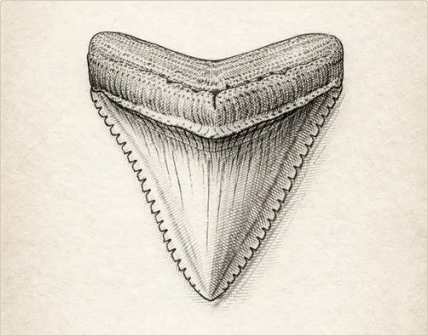
Five questions, most finds in under a minute

Serrated or smooth? A bourlette or not? What crown shape? Cusplets or none? Forked root or flat? A broken tooth is still worth keeping: check the serrations first, then the bourlette, then the crown shape.

SIX SPECIES

What turns up on the island.

From the common to the rare. Sizes are typical tooth heights; most of what you'll find sits at the small end.



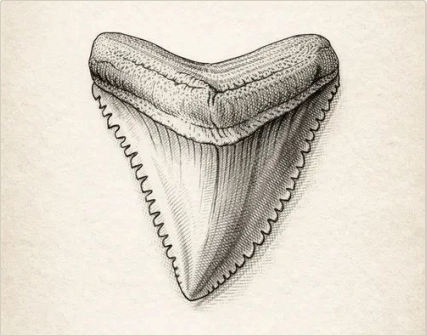
COMMON

Bull Shark

Carcharhinus leucas

Pliocene to recent · 15-25 mm

Broadly triangular with heavy serrations. Easy to confuse with dusky and sandbar shark teeth.



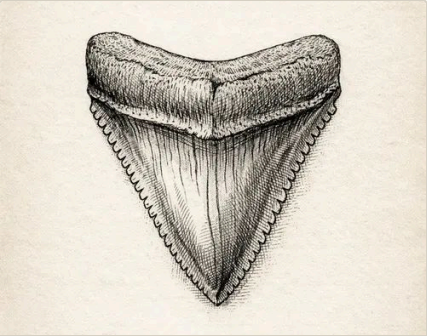
COMMON

Tiger Shark

Galeocerdo cuvier

Miocene to recent · 20-40 mm

An unmistakable hooked, notched profile with secondary serrations. Built for turtles and big prey.



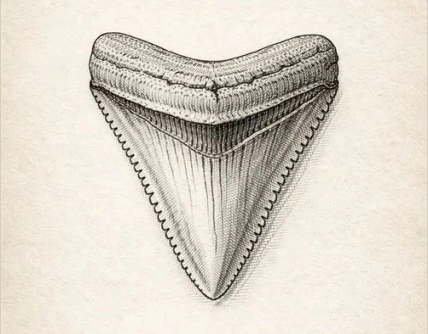
COMMON

Great White

Carcharodon carcharias

Pliocene to recent · 30-65 mm

Coarse serrations and no bourlette. Often mistaken for a small megalodon at first glance.



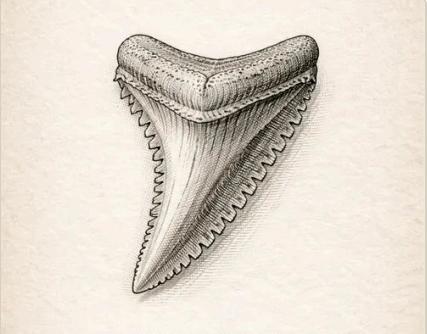
UNCOMMON

Broad-Tooth Mako

Cosmopolitodus hastalis

Miocene to Pliocene · 40-75 mm

A broad, smooth-edged blade with no serrations. Widely seen as the ancestor of the great white.



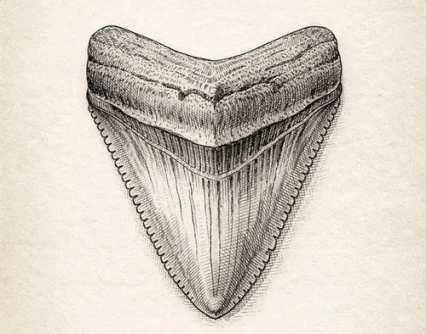
RARE

Snaggletooth

Hemipristis serra

Miocene to Pliocene · 20-40 mm

A curved blade with large, coarse serrations. The most wanted trophy after megalodon.



RARE

Megalodon

Otodus megalodon

Miocene to Pliocene · 25-175 mm

A massive triangle with a bourlette and fine serrations. Most turn up as broken pieces or juveniles under 60 mm.

A tooth tells you the size of its owner.

A common collector's rule of thumb for megalodon is about 8.5 feet of shark for every inch of tooth height. Treat it as a rough guess. Measure straight down from the tip to the bottom of the root.

TOOTH HEIGHT	ESTIMATED SHARK LENGTH	WHAT THAT MEANS
1 in (25 mm)	About 8.5 ft	A juvenile. The most common megalodon find.
2 in (51 mm)	About 17 ft	Still young, already longer than most great whites today.
3 in (76 mm)	About 25 ft	A big find for the island.
4 in (102 mm)	About 34 ft	An adult. Very rare here.
5 in+ (127 mm+)	About 42 ft+	A museum-class tooth.

Run your own numbers

The Size Calculator at **SharkToothIsland.org** estimates body length, weight and bite force from your measurement. It works for a tooth from any beach.

Measure it right

Use a ruler or calipers, straight down from the tip to the bottom of the root. Photograph it next to the ruler for your field log.

FIELD ETHICS & THE LAW

Can you keep what you find?

For loose teeth and shell picked up off the shoreline, the answer is usually yes. But "usually" isn't "always," and a few distinctions matter.

SITUATION	THE GENERAL RULE
Loose teeth and shell	Casual, personal collecting of common surface finds on public spoil-island shoreline is generally permitted. The NC Museum of Natural Sciences says no permit is currently needed on state or municipal public land.
Something significant	Articulated bone, a jaw, or a very large or unusual specimen: photograph it, note the location and contact a museum or university.
Federal land	Vertebrate fossils, including shark teeth, are protected on federal land under the Paleontological Resources Preservation Act.
Selling or commercial collecting	Commercial-scale collecting, mechanized digging and collecting for resale are governed by separate rules and usually need permits.
Digging	Take the loose teeth the tide has sorted. Don't dig pits or undercut the banks.
Old man-made objects	Pottery, glass, metal or points 50+ years old on state land are protected archaeological resources. Leave them and report them to the NC Office of State Archaeology.

When in doubt

Photograph it, note the location and leave it in place. You've broken no rule, there's a record if someone wants to study it, and you can ask later.

Who to ask

NC Division of Coastal Management for state coastal rules. US Army Corps of Engineers, Wilmington District, for the channel and spoil islands.

A practical orientation, not legal advice. Rules and jurisdictions change, so confirm before collecting anything beyond casual surface finds.

THE ETHICAL EXPLORER

Leave it better than you found it.

Legality is the floor, not the ceiling. A few habits make the difference between visitors the island welcomes back and visitors who wear it down for everyone after them.

Pack it all out

Food scraps, bottles, bag tags, wrappers. The tide takes some of it. Most of it just stays. Grab one piece of trash that isn't yours on the way back to the boat.

Hunt by hand

Keep the loose teeth you find. That's what the trip is for. Shovels and mechanized digging tear up the shoreline.

Don't dig into the banks

The tide does the digging and sorts the loose material for you.

Give wildlife room

Waterbirds nest on the Cape Fear islands in spring and summer. Stay out of posted areas. Fiddler crabs, shorebirds and the occasional alligator live here too. Keep dogs leashed or at home.

Leave the rare in place

Bones that clearly belong together, a near-complete jaw or skeleton, or old artifacts: don't pull them out. Photograph it, note where, and report it.

Share what you find

Museums, university geologists and state paleontologists genuinely want to hear about unusual finds.



Paddling to the island. Photo: Rob Silliman

FIELD LOG

A fossil without a location is a paperweight.

Record the three Ws for anything worth keeping. It turns a souvenir into a specimen, and it's the first thing Tooth ID will ask.

W 1

Where

Which stretch of shoreline, or GPS from your phone.

W 2

When

Date, time and how far into the low-tide window.

W 3

What context

Loose sand, shell bed, sticky mud or a bank. Photo it before you move it.

DATE _____ LOW TIDE _____ WEATHER _____ OBSERVER _____

#	WHAT I THINK IT IS	SIZE (MM)	WHERE & CONTEXT	PHOTO?
1				
2				
3				
4				
5				
6				
7				
8				

Pack-out log

Trash and other interesting debris you carried off

- [x] **My own trash, all of it.** — ALWAYS
- [ ] _____ — WHERE
- [ ] _____ — WHERE
- [ ] _____ — WHERE

FIELD LOG

Trip two.

DATE | LOW TIDE | WEATHER | OBSERVER

#	WHAT I THINK IT IS	SIZE (MM)	WHERE & CONTEXT	PHOTO?
1				
2				
3				
4				
5				
6				

Pack-out log

Trash and other interesting debris you carried off

- [x] **My own trash, all of it.** — ALWAYS
- [ ] — WHERE
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- [ ] — WHERE

SHARKTOOTHISLAND.ORG

Free tools for your next trip.

Hunt Planner: the week's best low-tide windows. **Tooth ID:** send us your find. **Reader Finds:** see what others have found. **Size Calculator:** how big was the shark.

Questions, corrections or a great find: **guide@sharktoothisland.org**

An independent, educational field guide. Not affiliated with the State of North Carolina, New Hanover County or the U.S. Army Corps of Engineers. It is not a guide service and does not guarantee conditions; you are responsible for your own safety. Photos by Rob Silliman; cover drone photo by Jed Whitley. Edition 3, November 2026.