

North Atlantic Shark Spotters Handbook

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All information presented in this handbook is for educational purposes only. The writer assumes no responsibility for the use or misuse of this information. The reader assumes full and complete responsibility for their actions and use of this material and holds the writer harmless from all legal claims and responsibilities. Shark's and shark attacks are dangerous situations that can result in death and serious injury. Use this material completely at your own risk. It is sad I have to post this, but over the years I have seen that people can do some really stupid things and, worse still, don't want to take responsibilities for their actions. If you use my work, you and you alone have made the decision to do so and assume full responsibility. I am a fish & wildlife biologist and am sharing some of my life experiences here. But it is up to you to decide how to act. Also, I offer no medical advice and encourage all that would be involved in shark spotting receive proper first aid and CPR training.

Anyone that has spent any time at the shore along the North Atlantic is seeing a remarkable comeback of a variety of marine life. Cleaner waters have brought whales and other species close to shore where they can be enjoyed by beachgoers and boaters.

Better fishing management practices have caused species that have been on decline to come back from the brink of extinction. With these changes' sharks are appearing, close to the shore, and are seen with more frequency. People watch and track Great Whites with love and amazement as they travel up and down the coast. Places such as Cape Cod have seen a tremendous increase of sightings and contacts over the last few years.

Sharks are an important part of our ocean ecosystem and need our protection. The danger of shark attack is very low. But, with more and more people entering the water, contact with sharks along the entire North Atlantic Shore is imminent.

The purpose of this handbook is to train persons to recognize and prevent shark-human interactions that might result in a problem. As we learn to share the shore with these magnificent creatures, we will need to be aware and avoid negative contacts. This work is primarily intended for lifeguards & beach patrols but, first responders, biologists, marine naturalists, ecotour guides, and even the general public may participate in shark spotting programs.

In preparing this manual help was sought from Shark Spotters of Cape Town South Africa. Their founder Greg and director Sarah were instrumental in assisting and providing training. I am grateful for their dedication to protecting sharks and people, their assistance, and hospitality. Shark Spotters of South Africa is the premier shark spotting program in the world and will serve as a model to all programs that follow.

It was not possible to simply adopt the Shark Spotter program from South Africa for several reasons. Instead one needed to be developed for the North Atlantic waters.

The coast of Cape Town is wringed with high cliffs that provide excellent spotting areas. The relatively flat coasts of the North Eastern United States provide few such natural high

points for spotting. South African waters are very clear, as opposed to the turbid waters of the North Atlantic. The primary problem species in South Africa is the Great White (and the occasional Bronze Whaler). Great Whites typically swim at the surface when close to shore making spotting easy. Here on our coast we face dangers from the Great White, but also the stealthy Bull Shark and Sand Tiger that stay near the bottom making it hard to spot from above.

Though any shark spotted should be reported and may require removing people from water some species are particularly dangerous in the North Atlantic: Great White, Bull, Tiger, Sand Tiger, Hammerhead, Blue, Dusky, Black Tip and Brown Sharks all pose a possible danger.

The North Atlantic Shark Spotter is committed to warning those in imminent danger, and in doing so, prevent dangerous encounters and also reporting these dangers to the proper authorities including, lifeguards, local police, marine police, United States Coast Guard, marine mammal rescue, and media outlets.

Shark Spotters also spot and report different kinds of dangerous marine wildlife and conditions such as: dangerous jellyfish, red tides, rip currents, waterspouts, lightning, dangerous waves, stranded mammals, fish kill, bird kills, flooding, pollution & spills, nesting birds, marine turtles, and any organism or condition that possess a threat to life safety and the environment.

Shark spotting can be a fun and healthy hobby for the citizen scientist. You get to walk the beach and see the wonders of nature while providing a useful service to help protect the public. Shark Spotters can educate the public while furthering the cause of shark conservation.

There are a few skills that all shark spotters need. These are of course First Aid and CPR. All beachgoers should be aware of how to perform CPR. Drownings are ever present and provide the greatest threat to beach goers. Far greater than any type of dangerous marine life. First Aid and CPR training is often available free or at low cost from local EMS organizations, YMCAs, and the American Red Cross. It is also available online and can be accessed from your home computer. All North Atlantic Shark Spotters need to be trained and comfortable with CPR and First Aid. Especially with the control of bleeding and traumatic injuries. Lifeguards & Beach Patrols need even more additional training including lifeguard certification, boating certification, and possibly SCUBA training.

Shark Spotter Skills:

- Each beach should have a lifeguard designated as a spotter. That should be their primary assignment for the day.
- Citizen scientists should pick an area or series of beaches that you plan to patrol. Once done, set up a regular schedule to follow. Shark spotters should introduce themselves to local authorities so they know who you are and what you are doing. Always obey all local laws and ordinances when spotting.
- Always spot with others so you are not alone. Lifeguards will spot as part of an ocean rescue team. Volunteer citizen scientists should spot with a buddy. If this is not possible then be sure you notify someone of your patrol route and times of patrol.
- Always be aware of tides and weather conditions.
- You can start a shark spotting group or club. Not only is it more fun to spot with others, but it is more useful and effective to help protect the public.
- Serve as a shark advocate. Educate people about the importance of shark's and help them understand we can live together with sharks without killing them or they harming us.
- Be on the lookout for people in danger of drowning as it is a major cause of death at the shore, do not attempt to rescue people unless you are a trained and certified lifeguard. Instead call for help and monitor the situation. You should have local beach patrols contact numbers in your phone.
- Patrols should be frequent and done from the shore, boats, jet skis, body boards, or with the use of drones.
- When Possible, patrols should be done from the highest point possible.
- Use a drone with camera if no high spot is possible.
- Scan the surface for fins using first your eyes, then binoculars.
- Interview surfers to see if any dangerous marine life has been spotted.
- Walk the shoreline to look for other dangers such as jellyfish or red tides.
- If shark or danger is spotted warn all on beach, then contact the proper authorities.
- Document in writing the results of each beach patrol. Keep a notebook and fill it with copious notes. Always include the location, time, weather conditions, incidents noted, and any actions taken by the spotter.
- In the event of an attack your notes may be valuable to researchers and officials so keep them detailed and factual.

Shark Spotter Equipment:

- Shark Bite First Aid Kit (Severe Bleeding)
- CPR Masks & Shields
- Marine Band Radio
- Cell Phone / iPad
- Binoculars
- Sun Screen
- Polarized Sun glasses
- Drone with Camera (Optional but recommended)
- Bull Horn
- Flashlight
- Floating thermometer
- Notebook
- Rain Gear
- List of important emergency contacts such as beach patrol, marine police, USCG, and local police.

Books and Pamphlets:

The Sharks of North American Waters

Angler's Guide to Sharks of the Northeastern United States Maine to Chesapeake Bay

Sharks of North Carolina and Adjacent Waters

North Atlantic Sharks Relevant to Fisheries Management

Sample Field Note Entry

DATE: *November 21, 2019*

LOCATION: *Public Beach, Sea Bright New Jersey near the pavilion.*

TIME: *1140 hours*

TEMP: *Air Temp in the low 40s.*

CONDITIONS: *Misty spray with fog and poor visibility, less than 50 yards.*

ADDITIONAL NOTES: *Beach deserted. Cold spray blowing with frequent waves over 5' in height. Pod of dolphins or porpoises about 50 yards off shore at the edge of visibility. Over a dozen fins sighted. Pod moving south to north.*

Large dorsal shark fin surfaced about 30 yards from shore moving slow from north to south. Fin was visible for about 50 seconds before disappearing in the mist. Continued to observe the area for the next hour but no further shark sightings noted. Fin was triangular about 2 to 3' in height.

Appeared to be Great White Shark based on shape and size, but not enough detail present to make positive identification.

No persons on the beach with the bad weather conditions, so no notifications made. Later review of shark tracking software noted a Great White ping day earlier about 10 miles south of the sighting.

Advanced spotters that are lifeguards may also serve as local shark attack investigators. Local investigators can be on the scene faster than national and international crews.

The Shark Attack Investigators Handbook

This handbook is developed for use by investigators for the New Jersey/New York Shark Attack File (NJSAF). With minor modifications it can prove useful for investigators in other parts of the world. The information gathered by the NJSAF is designed for use by applied ocean rescue professional. Though the information is also useful to scientists and journalists, the main consumer of this information is for those actively engaged in the protection of our beaches. Lifeguards, Beach Patrols, Fire Departments, and Police agencies.

There are two types of shark attack that require investigation, active and historical. Active attacks are investigated as soon to the incident as possible. The investigation of historical attacks is just as important as active attacks. It is from historical attacks that trends and patterns for a particular geographic location can be studied.

Shark attack & interactions need to be studied to help in preventing further attacks. By learning to prevent attacks, mankind can better live with these large predators of the oceans. In order for scientists to study each attack, detailed information must be collected at the incident site.

It is the role of the Shark Attack Investigator to gather this information. It is important that investigators gather proper information that will be useful for professional researchers. Evidence must be collected following scientific method and following forensic biological methodologies.

Field Investigators need formal training in marine biology, fisheries biology, field biology, oceanography, or forensic biology. Investigators should be, or have been, ocean lifeguards at some time in their life. Investigators must be skilled at collecting impartial data and following scientific method at all times. Following scientific method is paramount to ensure information collected can be relied on by ocean rescue personnel.

Field Investigators need to be trained in the proper forensic collection and preservation of biological evidence. Photographs of injuries, tooth fragments, and any other physical evidence from the incident need to be preserved and passed on to the appropriate authorities.

Field investigators need good communicative and interviewing skills.

Investigators must be discrete and protect the victim and their families from embarrassment or undue stress.

Shark Investigator's Field Equipment

- **Waterproof Bag** to carry field gear. It should be of a size to fit your notebook, GPS, pencils, camera, recorders, and identification guides.
- **Plastic Tub** to carry field gear. The remaining field gear should be placed in a plastic tub and carried in your vehicle.
- **Waterproof Notebooks** such as the Rite in the Rain brand or something similar. Notebooks should be bound. The Rite in the Rain environmental or general field notebooks work well.
- **Pencils** such as the Rite in the Rain brand field types work well.
- **30-50' Tape Measure** of any type as long as it is waterproof and salt resistant.
- **Meter Stick and Metric Ruler** should be carried for smaller measurements.
- **Camera and Video Recorder** of any quality brand that is waterproof or resistant.
- **Audio Recorder** for documenting interviews.
- **GPS** such as the Garmin hand held varieties.
- **Plastic Zip Lock Bags** of Assorted Sizes for collecting evidence.
- **Impression Clay** can be used to identify the shark. By pressing impression clay into tooth marks on surfboards or boats you can often get an impression of the shark tooth.
- **Magnifying Loupe** for examining evidence such as bite marks and impressions left in clay.
- **Foul Weather Gear** and Boots are needed. Any marine quality brand such as Helly Hansen or Chemtex work well. The gear should include hooded jacket, pants, and boots,
- **Life Jacket** for work on docks and boats.

- **Mask, Snorkel, fins, and wetsuit** should be in your tub in case you need to take a quick look underwater. It is not necessary to carry SCUBA gear as diving should only be done as a team effort when needed.
- **Utility Knife** of any type. Sailing knives or dive knives work well.
- **Business Cards** to give to witnesses and victims. Be sure they are able to contact you if they think of any additional details relevant to the attack.
- **Portable Marine Radio** to monitor transmissions, keep track of weather, and call for help if needed.
- **Forceps** for evidence collection
- **Rubber Gloves** for evidence collection
- **Waterproof flashlight**
- **Cell Phone**
- **Shark Identification Guides** such as *The Sharks of North American Waters* by Castro, *Sharks of North America* by Castro, *Sharks of the World* by Compagno, and *Angler's Guide Sharks of the Northeastern United States* by NMFS are well suited for the investigator.
- **Tablet or Laptop** for data collection.
- **Binoculars**
- **Length of String or Rope.** Different lengths are good such as a precut 10 meter, 50 meter, and 100 meter lengths.
- **Salinity Meter** to take samples of the attack area ASAP after the incident.
- **Floating & Sinking Thermometers** for surface and subsurface temperatures ASAP after the incident.
- **First Aid Kit.** Carry a small trauma kit. Even though the victim of the attack will have received treatment other types of injuries may occur. Also remember there is a dangerous shark in the area and another attack is possible so be prepared.

On Notification of an Attack

1. Gather as many details as you can.
2. Obtain directions to attack location.
3. Gather your field equipment.
4. Notify others of you plans.

On Arrival at the Scene

1. Access the situation for safety.
2. Identify yourself to authorities.
3. Gather facts: who, when, when, where, why, how.
4. Photograph the area and all evidence.

5. Collect evidence for impressions.
6. Interview witnesses.
7. Interview responders.
8. Interview victim if possible.
9. Take copious notes, never rely on memory.
10. Test for temperature of surface water and subsurface waters.
11. Test salinity.
12. Record weather conditions.
13. Record surf and current conditions.
14. Record turbidity.

After the Field Investigation

1. Review notes.
2. Make follow up visits and calls.
3. Download photos and videos.
4. Review audio interviews.
5. Review weather conditions for the time and location of attack.
6. Note the tide and marine conditions at the time of the attack.
7. Review fishing reports to determine species in the area.
8. Write and file a detailed report.

Report Format

A separate report and incident number is required for each victim if more than one.

1. Incident Number
2. Date
3. Location
4. Victim's Name
5. Victim's Age
6. Type of Activity such as swimming, fishing, clamming, boating, or wading.
7. Type and extent of injuries.
8. Narrative of the attack
9. Number of sharks involved in incident
10. Species of sharks if known
11. Weather conditions
12. Water Conditions- Tide, currents, surface temperature, subsurface temperature, salinity, and turbidity.
13. Special conditions such as fishing in the area or bait fish present.
14. Victim's Account if possible.
15. Witness statements.