

# The Shark & Hazardous Marine Life Investigators Handbook: For Lifeguards & Ocean Rescue Professionals

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*This handbook was 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 will be those actively engaged in the protection of our beaches: Lifeguards, Beach Patrols, Fire Departments, and Police agencies.*

All incidents involving human-shark or human-dangerous marine life interactions require investigation. When possible, the word incident will be used instead of attack. All incidents that result in death, injury, or close calls to injury should be investigated.

All attacks are incidents, but not all incidents are attacks. For instance, a hooked sailfish that causes injury with its bill while hooked is not an attack. Not all incidents are on humans directly as in when a shark rams or bites a boat. The incident still requires investigation as the potential for injury was present.

The end result of an incident investigation is a report. The report should be made available to other ocean rescue personnel for review. The report should also be available to scientists and public safety officials.

There are two types of shark and dangerous marine life incidents that require investigation, active and historical. Active incidents are investigated as soon to the event as possible. The investigation of historical incidents 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, and dangerous marine life, attacks & interactions need to be studied to help in preventing further incidents. By learning to prevent attacks, mankind can better live with these large predators of the oceans and other marine creatures. In order for scientists to study each attack, detailed information must be collected at the incident site.

It is the role of the Shark & Dangerous Marine Life Incident 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 should have some 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.

Every Ocean Rescue Team should have at least one trained investigator on staff.

# Shark & Hazardous Marine Life Investigator's Field Equipment

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- **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.
- **Marine Life Identification Guides** such as the Peterson series.
- **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 Incident

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- Gather as many details as you can.
- Obtain directions to attack location.
- Gather your field equipment.
- Notify others of you plans.

# On Arrival at the Scene

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- Access the situation for safety.
- Identify yourself to authorities.
- Gather facts: who, when, when, where, why, how.
- Photograph the area and all evidence.
- Collect evidence for impressions.
- Interview witnesses.
- Interview responders.
- Interview victim if possible.
- Take copious notes, never rely on memory.
- Test for temperature of surface water and subsurface waters.
- Test salinity.
- Record weather conditions.
- Record surf and current conditions.
- Record turbidity.

# After the Field Investigation

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- Review notes.
- Make follow up visits and calls.
- Download photos and videos.
- Review audio interviews.
- Review weather conditions for the time and location of attack.
- Note the tide and marine conditions at the time of the attack.
- Review fishing reports to determine species present in the area.
- Write and file a detailed report.

## Report Format

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

- Incident Number
- Date
- Location
- Victim's Name
- Victim's Age
- Type of Activity such as swimming, fishing, clamming, boating, or wading.
- Type and extent of injuries.
- Narrative of the attack
- Number of sharks involved in incident
- Species of sharks if known

- Weather conditions
- Water Conditions- Tide, currents, surface temperature, subsurface temperature, salinity, and turbidity.
- Special conditions such as fishing in the area or bait fish present.
- Victim's Account if possible.
- Witness statements.
- Each of the following questions should be answered to the best of the investigator's abilities based on fact and evidence, without speculation:
- Was it a shark responsible for the incident?
- If it was not a shark was species was responsible?
- What species of shark was responsible?
- What water conditions were present that contributed to the incident?
- Was the victim engaged in a behavior that triggered the attack?
- What is the likelihood of a repeat incident?
- Could the incident have been prevented, and if so, how?
- What can be done to prevent future incidents?

## A copy of the report should be sent to:

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- The New York & New Jersey Shark Attack File
- The International Shark Attack File
- The International Surf Lifesaving Association
- United States Lifesaving Association
- Local Station of the United States Coast Guard



# Historical Investigations

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Historical investigations are even more important than active ones for several reasons. Historical information can be used to develop SOGs, determine the probability at each beach of some type of incident, predict times and conditions that are of a particular danger, and identify species likely to be involved in incidents.

Historical investigations require a different set of skills than active cases, but the same reports should be generated.

1. The historical investigator should start with local bait shops, they are often a great source of local shark lore.
2. Libraries should be consulted and old local newspapers searched for shark related topics.
3. When possible, interview living witnesses and victims or their decedents. It is surprising how many facts are left out of the newspaper accounts.
4. Speak to local newspaper agencies, often they will search their morgue for you to help uncover incidents.
5. When an account is uncovered, a report should be generated that follows the same format as active attack investigations.

# Types of Incidents Requiring Investigation

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- Shark Incidents, including attacks on people & boats.
- Stingray stings.
- Fish incidents resulting in injury or death.
- Jellyfish stings
- Sea Urchins, Mollusk, and Other Invertebrates stings and poisonings
- Swimmers Itch & Sea Lice outbreaks
- Undetermined Aquatic Injuries

*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 attack investigation receive proper first aid and CPR training.*

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