

1 **SHARK ATTACKS**

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2 **Types of Attacks**

- Provoked
- Unprovoked
 - “Hit and Run”
 - “Bump and Bite”
 - “Sneak” Attack

3 **Unprovoked Attacks**

- “Hit and Run”
 - Most common
 - Normally occur in surf zone
 - Attacker is not seen and does not return
 - Causes:
 - Mistaken identity
 - Related to social behaviors
 - Usual Injuries:
 - Small lacerations
 - Rarely life-threatening

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- “Bump and Bite”
 - Usually occur in deeper waters
 - Circling and bumping prior to attack
 - Repeated attacks
 - Causes:
 - Feeding
 - Antagonistic Behavior
 - Injuries:
 - Multiple bites
 - Responsible for most fatalities

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- “Sneak” Attack
 - Usually occur in deeper waters
 - Strike occurs without warning
 - Causes:
 - Feeding
 - Antagonistic Behavior
 - Injuries:
 - Multiple bites
 - Responsible for most fatalities

6 **Basic Trends**

- In the past century:
 - Increase in shark attacks
 - Decrease in the fatality per attack
- Why is there an increase of attacks?
 - Population growth
 - Leisure Time and recreation
 - Improved documentation
 - International Shark Attack File (ISAF)
- Why is there a decrease of deaths?
 - More advanced medical care

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10 **Most “Dangerous”: Sharks**

- White Shark (*Carcharodon carcharias*)
- Tiger Shark (*Galeocerdo cuvier*)
- Bull Shark (*Carcharhinus leucas*)

11 **White Shark (*Carcharodon carcharias*)**

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- Most fatal attacks
- Large size
- Aggression due to mistaken identity
- Willingness to test edibility

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14 **Tiger Shark (*Galeocerdo cuvier*)**

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- Second most numerous unprovoked attacks
- Large Size
- Hunting Style:
 - Close to the shore
 - Ocean surface
- Natural Curiosity
- Opportunistic feeders

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17 **Bull Shark (*Carcharhinus leucas*)**

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- Third in unprovoked attacks
- What about unidentified attackers?
- Large Size
- Habitat:
 - Tropical areas
 - Bodies of freshwater
- Opportunistic feeders

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20 **Most “Dangerous”: Regions**

- Middle America
- Australia
- United States
 - Florida
 - Hawaii
 - California
 - Virginia

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22 **Middle America**

- 60 recorded attacks
- 31 fatalities
 - Most recent fatality in 1997
- 51.66% of attacks are fatal
 - Highest fatalities per attack
 - Veracruz (13)
 - Panama (13)
 - Quintana Roo has the highest fatality rate

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24 **Australia**

- 329 recorded attacks
- 136 fatalities
 - Most recent fatality in 2006
- 41.34% of attacks are fatal
 - New South Wales (134)
 - Queensland (98)

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26 **United States of America**

- 943 recorded attacks
 - Highest number of attacks
- 55 fatalities
 - Most recent fatality in 2005
- 5.83% of attacks are fatal

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28 **Florida**

- 544 recorded attacks
 - Most attacks out of all 50 states
- 13 fatalities
 - Last fatality in 2005
- Volussa
 - 193 attacks

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30 **Hawaii**

- 107 recorded attacks
 - Second most attacks in the United States
- 15 fatalities
 - Last fatality in 2004

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32 **California**

- 92 recorded attacks
 - Third numerous amount of attacks
- 7 fatalities
 - Most recent fatality in 2004

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34 **Virginia**

- 4 recorded attacks
 - 13th in number of attacks in the United States
- 1 fatality
 - Most recent fatality in 2001

35 **Prevention: What can be done?**

- Stay in groups
- Avoid:
 - Shiny jewelry
 - Bright clothing
 - Uneven tan-lines
 - Excessive splashing
 - Commercial fishing grounds
 - Water with sewage

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- Do not enter water if you are bleeding
- Avoid the water during twilight and night
- Exercise Caution In:
 - Murky Water
 - Sandbars
 - Steep drop-offs

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38 **If you are attacked:**

- Avoid passive behavior
 - Use force on sensitive areas:
 - Gill Slits
 - Eyes
 - Nose
- Exit the water immediately

39 **In Perspective: Relative Risk**

- Drowning and other beach related fatalities
 - 1 in 2 million
- Drowning Fatalities
 - 1 in 3.5 million
- Shark Attacks
 - 1 in 11.5 million
- Shark Attack Fatalities
 - 0 in 264.1 million

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- Alabama, Florida, Georgia, Louisiana, South Carolina, and Texas:
 - Alligator Attacks
 - 391 recorded attacks
 - 17 fatalities
 - 4.3% fatality rate
 - Shark Attacks
 - 592 recorded attacks
 - 9 fatalities
 - 1.5% fatality rate

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- Lightning Data: Coastal United States (1959-2005)
 - Average 39.5 strikes/year

- Shark Data: United States (1959-2005)
 - Average 16.8 attacks/year

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- 2001-2005
 - Dog Attack Fatalities
 - 113
 - Shark Attack Fatalities
 - 7

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- 2001-2005
 - Hunting Incidents
 - 3605 recorded incidents
 - 354 fatalities
 - Shark Attacks
 - 219 recorded attacks
 - 7 fatalities

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Humans: The Bigger Threat

- Approximately 500 species of Sharks
 - Four are responsible for the majority of attacks
- Why kill sharks?
 - Food
 - Commercial fishing

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- 1950's:
 - Blue Sharks: average 115 pounds
 - Oceanic Whitetip Shark: most common tropical shark
- 2000's:
 - Blue Sharks: average 49 pounds
 - Oceanic Whitetip Shark: 99% decrease in population
 - Nearly extinct

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Jaws

- Peter Benchley
 - *Shark Trouble* (2002)
 - “The new knowledge we’ve gained since the mid-1970s has convinced me that while almost all of the great-white-shark behaviors I described in *Jaws* do, in fact, happen in real life, almost none of them happen for the reasons I described. ... We knew so little back then, and have learned so much since, that I couldn’t possibly write the same story today.”

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