External Watercraft-related Wound Types in the Florida Manatee (Trichechus manatus latirostris)

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Wound - an injury to the body (as from violence, accident, or surgery) that typically involves laceration or breaking of a membrane (such as the skin) and usually damage to underlying tissues

Trauma - an injury (such as a wound) to living tissue caused by an extrinsic agent
FWC Watercraft Mortality Categories

*Impact* - fatal trauma caused by the impact of a propeller, hull, skeg, rudder, other projection from the hull

*Propeller* - fatal trauma caused by the cutting action of the propeller (i.e. penetrating body cavity, bones, or organ systems, etc) or infection resulting from the wound

*Impact and Propeller* - fatal trauma resulting from a combination of the previous two categories

*Sharp* - most often a single penetrating linear wound, with fatal acute or chronic trauma caused by cutting action
Watercraft-related Wounds

Rommel et al. 2007. Forensic Methods for Characterizing Watercraft From Watercraft-Induced Wounds on the Florida Manatee (Trichechus manatus latirostris)

Lightsey et. al. 2006. Methods Used During Gross Necropsy to Determine Watercraft-Related Mortality in the Florida Manatee (Trichechus manatus latirostris)

Watercraft-related Wounds

Wright et. al. 1995.
Watercraft Mortalities, 2000-2009

All carcasses with acute watercraft trauma from 2000-2009 were examined.

Total of 387 carcasses were included

Placed wound patterns into 8 categories based on external appearance
1. Parallel Wounds
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1. Parallel Wounds
2. Single Linear Wounds
2. Single Linear Wounds
2. Single Linear Wounds
2. Single Linear Wounds
2. Single Linear Wounds
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
3. Parallel Wounds with Perpendicular Wound
4. Two Linear Wounds Perpendicular to Each Other
5. Multiple Apparent Wounds
5. Multiple Apparent Wounds
5. Multiple Apparent Wounds
5. Multiple Apparent Wounds
5. Multiple Apparent Wounds
5. Multiple Apparent Wounds

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6. Irregular Wounds
6. Irregular Wounds
6. Irregular Wounds
7. Too Decomposed
8. No Visible Wounds
Watercraft Wound Patterns, 2000-2009 (n=387)

- Parallel: 33%
- Single Linear: 27%
- Parallel and Linear: 21%
- 2 Linear: 1%
- Irregular: 5%
- Multiple: 4%
- Too Decomposed: 6%
- No Wounds: 3%
- Multiple: 4%
- Parallel and Linear: 21%
- 2 Linear: 1%
- Irregular: 5%
- Too Decomposed: 6%
- No Wounds: 3%
Watercraft Wound Patterns, 2000-2009 (n=387)

Irregular; 5%
Multiple; 4%
2 Linear; 1%
Watercraft Wound Patterns, 2000-2009 (n=387)

- No Wounds: 3%
- Too Decomposed: 6%
Questions?