

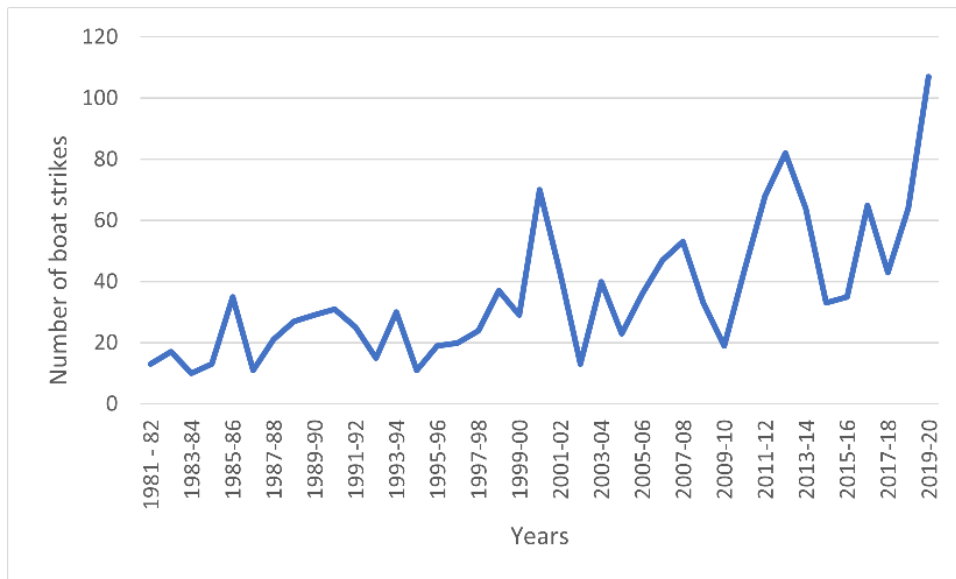
## Increase of sublethal boat strikes on manatees during winter seasons at Blue Spring State Park

*By Cora Berchem and Wayne Hartley, Save the Manatee Club*

Most adult Florida manatees can be identified by unique scar patterns (Hartman 1979; Beck/Reid 1995; Beck et al 1982) and scars on manatees have been used to estimate rates of reproduction, adult survival, and population growth (Beck & Clark 2012). In fact, 47 individual scar patterns have even been documented on a single manatee carcass (FWC, pers. communication). Manatee mortality from watercraft has been on the rise in recent years with around 20% of mortalities each year being attributed to watercraft collision, with the exception of years that saw severe red tides or cold events (FWC data). In addition, between 20-25% of manatee rescues each year list watercraft collision as the reason for rescue.

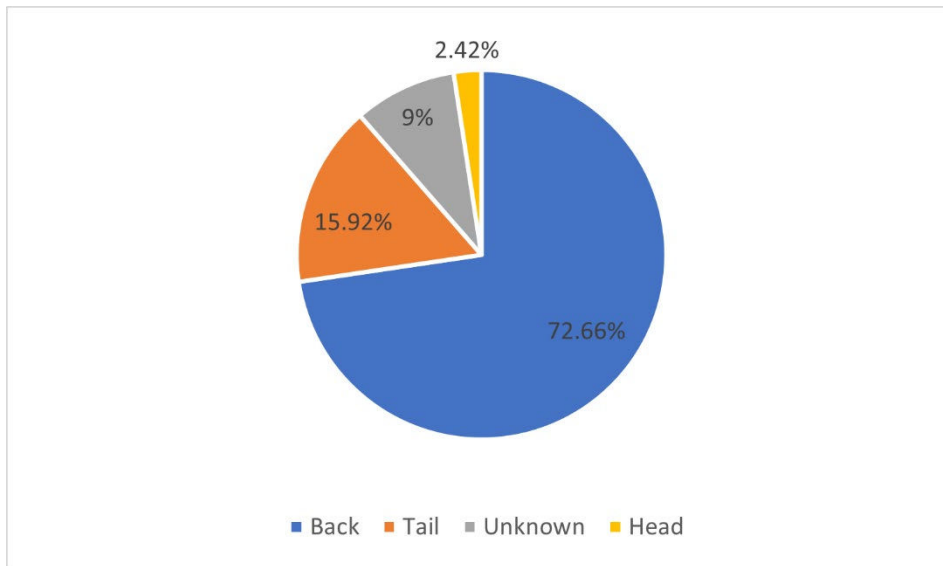
While manatee rescues and mortalities in Florida are well documented, sublethal boat strikes on manatees have not been studied as closely. As stated by O'Shea, "...the number one objective of the Florida Manatee Recovery Plan is to identify and minimize causes of manatee injury and mortality," but the focus has been largely on mortality (O'Shea 2001) and the "incidence of wounding by boats on Florida manatees is probably unparalleled in any marine mammal population around the world." Florida leads the nation with a total number of 961,266 registered vessels in 2019 (FWC report), which does not include vessels that are registered in other states and brought to Florida.

During each winter season at Blue Spring, Save the Manatee Club documents new boat strikes on manatees that are inflicted upon the animals in the course of the season. In recent years we have seen a drastic increase, culminating in 104 manatees sharing 107 boat strikes during the 2019-20 season (Figure 1).

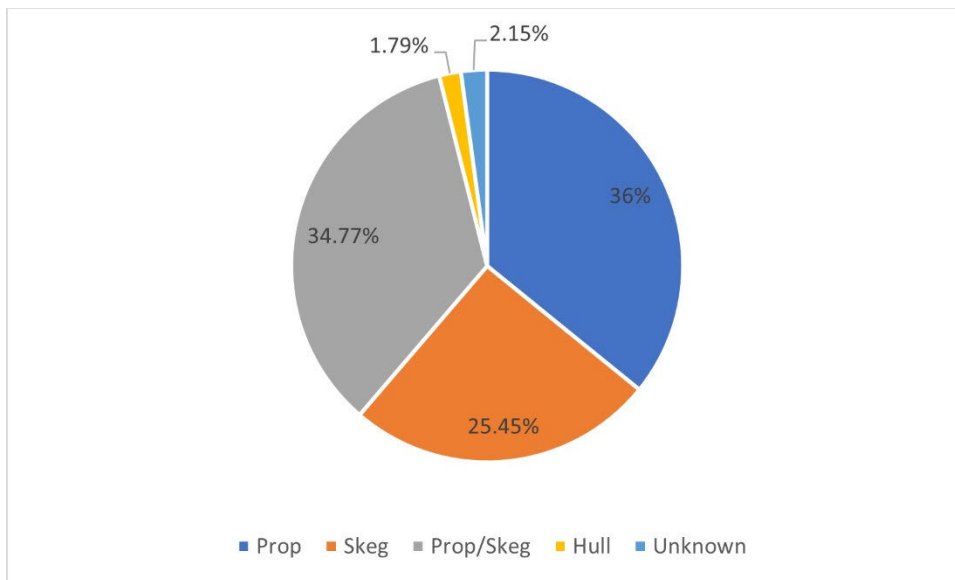


**Figure 1. Increase of sublethal boat strikes on manatees at Blue Spring State Park during winter season 1981-2020.**

Most new boat strikes occur around the major holidays (Thanksgiving and Christmas), as well as generally after warm spells when the manatees leave the protected sanctuary to forage. Data from 2016 – 2020 indicates that 72.66% of boat strikes occurred to the manatee’s back and 15.92% to the tail, indicating that most likely the manatee was trying to dive down or swim out of the way when hit. (Figure 2). Thirty-six percent of strikes were caused by a propeller and an almost equal amount (34.77%) of strikes were caused by a combination of the skeg and propeller. (Figure 3)

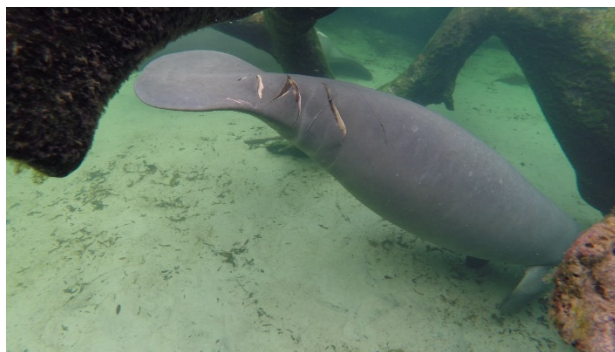


**Figure 2. Location (back, tail, head, or unknown) of sublethal boat strikes on Blue Spring manatees 2016-2020.**



**Figure 3. Type (Prop, Skeg, Prop/Skey, Hull, and unknown) of sublethal boat strikes on Blue Spring manatees 2016-2020.**

These numbers are reason for concern. Although Blue Spring is a protected warm water sanctuary for manatees during the winter months and surrounding waters are designated idle or slow speed zones, sublethal boat strikes are increasing. Manatees need to leave the safety of the sanctuary to forage and venture to areas south and north of the spring, including Lake Dexter, Lake Beresford, and Lake Woodruff. Several manatees have recently been observed venturing into the Wekiva River, both during the summer and winter months. This is an area that has little protection, and boaters may not be aware that manatees use the river. With warming winters, manatees seem to spend more time outside the sanctuaries, which would put them at increased risk of being killed or injured from boat collisions. As pointed out by O'Shea, in addition to ethical questions of inflicting wounds on a protected species, it is unknown if sublethal injuries may inflict problems for reproductive females, therefore affecting the population as a whole. Additional enforcement and education as well as inclusion of sublethal boat strike data for evaluation of the manatee population and manatee protections is urgently needed.



*BS988 'Freya' with a sublethal boat strike injury, inflicted in December 2017 (left) and healed in November 2019 (right). Photos: Save the Manatee Club*

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