

## The Significance of Webcams for Continued Manatee Research at Blue Spring State Park

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The manatee population at Blue Spring State Park, a warm water winter aggregation site for the West Indian manatee in Orange City, Florida, is well studied (Hartman 1979; Powell/Waldron, 1981; Bengtson, 1981; O’Shea/Hartley, 1995; O’Shea/Langtimm, 1995). Between the months of November - March (“Manatee Season”), Save the Manatee Club conducts daily morning “roll calls” to count and identify individual manatees. This large body of research, joined by Wayne Hartley almost 40 years ago as a Blue Spring Park Ranger and then as the SMC Manatee Specialist, has established an extensive life history program allowing researchers to track some manatee genealogies over seven generations



*Manatee aggregation filmed with the above water camera at Blue Spring.*

In collaboration with the Florida Park Service, Save the Manatee Club established above- and underwater webcams at the park at the beginning of the 2011/2012 winter season. The AXIS PTZ cameras can be watched live by viewers from around the world (ManaTV.org), but they also have significant impact for our research. While we are able to gather a lot of important data on individual manatees, reproduction, rapid growth of calves, and boat strikes acquired during the winter season during the morning roll calls, the webcams have provided a unique opportunity for monitoring behavior of individuals, determining gender of calves, and assessing sick and injured manatees.

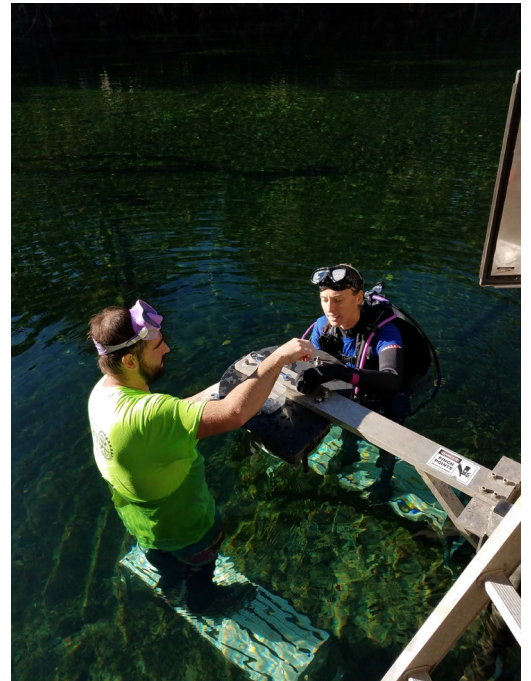


*A manatee cow and calf are monitored with the underwater camera at Blue Spring.*

Some interesting things we have learned: During the 2017/2018 season, BS676 “Swale” suffered a moderately-severe boat strike. While his behavior was lethargic when he was by himself near the head spring in the mornings, he was observed on the camera following female manatees near the river in the afternoons. During the 2018/2019 season, BS715 “Cree” was observed on the underwater camera with her large

calf. The calf was seen socializing with other manatees and nursing from other females in addition to Cree. Cree's carcass was recovered two days later in the lagoon near Blue Spring, (cause of death undetermined). From the earlier observations on the webcam, we had evidence that the calf would most likely be okay without the mother. During the 2018/2019 season, we observed an individual manatee swimming on his side, and rescue was considered. While it was difficult to approach the manatee with the research canoe to film the behavior without further disturbance, the webcam provided us with valuable footage.

In addition, the webcams have provided us with additional photos of individuals that were submitted to the statewide Manatee Individual Photo-Identification System database (MIPS) at the U.S. Geological Survey. Starting in 2016, we also began utilizing the webcams to document manatee summer sightings at Blue Spring. While historically very few manatees visited the park during the summer months, in June 2019, the webcams documented up to 224 manatee sightings in a single month (number of times a manatee was seen on the camera, not number of individuals seen during the course of the month). This new data validates that additional measures are needed to protect manatees from human harassment during the summer months.



*SMC staff and volunteers install the underwater camera.*