

# Students, zoo partner in effort to track sea turtles

- By Brittany Mulligan for Hometown News
- Jun 24, 2021 Updated Jun 24, 2021

BREVARD COUNTY – To celebrate “World Sea Turtle Day” on June 16, the Brevard Zoo opened a new “Turtle Tech” exhibit and children’s play area behind the Paws On Indian River Play Lagoon.

Keith Winsten, Brevard Zoo’s executive director, relayed the fruits of a partnership between the zoo, Embry-Riddle Aeronautical University, James Madison University, University of Central Florida, Edgewood Jr./Sr. High School, Bayside High School and Northrop Grumman.

Students have worked together to build an endurance drone that is capable of flying miles offshore to film sea turtles swimming in the open ocean, a smart buoy to connect the drone to the nearest cell phone tower, and beach camera to record nesting sea turtles.

The goals of this new partnership started as a means to help create new technology that could aid researchers and to engage students at all levels in science, technology, engineering and math activities.

Turtle Tech goals then expanded to build something that would influence students and inspire them to move on to careers that will make a big difference in the world.

“We’ve got the engineers here, we’ve got the expertise, and we’re the second-most or first-most important breeding sea turtle beach on the western hemisphere,” Mr. Winsten said.

Ayana Oancen, a rising junior at James Madison University, was one of several team members who got to work on the smart buoy.

“Essentially what you’re seeing here is a smart buoy with a bunch of electronics inside that can measure several components,” Ms. Oancen explained. “We have an accelerometer for the purpose that if waves hit the buoy, we can see the acceleration goes up a bit and know something’s going on out here.

“We have an environmental sensor that does altitude, temperature, pressure and humidity,” she continued. “We have a GPS that will tell us the location of the buoy, and we have a transmitter sensor that, on my laptop, is sending me all of the information that the sensors are coming up with.”

The buoy gets its energy from being attached to a solar panel, and if detached, a full battery can maintain itself for up to 27 hours.

Incoming sophomores at James Madison University will have the opportunity to upgrade the smart buoy to increase its communication range and its ability to last at sea during a thunderstorm.

According to the Sea Turtle Preservation Society’s website, Florida hosts 90% of the sea turtle nests laid in the country each season, and Brevard County’s beaches are part of the largest nesting sites of loggerhead sea turtles in the world.

The Brevard Zoo’s sea turtle healing center is not normally open to the public, but for World Sea Turtle Day, elected officials, students and media were allowed to visit the tanks near the zoo’s linear trail.

The healing center can accommodate up to 20 sea turtles at a time, based on available staffing, but has been able to take in hundreds to thousands of baby sea turtles after strong winds or post-hurricane displacements.

“Pickles,” a juvenile river turtle was found with a broken shell, and officials demonstrated how the healing center has been helping this turtle get better.

“We suspect it was from a boat,” said Shanon Gann, Sea Turtle program manager. “We use raw, unfiltered honey on the shell because it acts as a natural antiseptic and antifungal. We call raw honey magic because it draws out impurities.”

Out in the ocean, plastics are a large culprit of getting inside sea turtle’s digestive tracks. Mrs. Gann added that plastic in the water is starting to take on a similar odor to the food sea turtles eat, making it harder for them to distinguish what is edible.

“In the 90s, we should have pushed reduction more than recycling,” she said. “Small changes makes a difference, using a metal straw or a reusable bag at the grocery store. It all starts with us.”

The public can visit the new Turtle Tech exhibit to learn more about the efforts being made to track sea turtles.

Visit [www.brevardzoo.org](http://www.brevardzoo.org) for tickets and daily park hours.