Turtle Tech

MISSION: Turtle Tech is a collaboration between Northrop Grumman and the Brevard Zoo to apply the expertise and enthusiasm of engineers to help develop innovative solutions to sea turtle research challenges. These solutions increase the efficiency and effectiveness of research on the behavioral life cycles of sea turtles and improve conservation practices for their environments.

GOALS

- Develop, test, and build a technology system that helps solve sea turtle conservation challenges in Brevard County.
- Address data gaps that sea turtle researchers face due to the limitations of current collection methods.
- Ensure the final system is "no-touch" and limits the disruption of sea turtle behaviors.
- Engage K-12 and university students at all levels to contribute to aspects of the project subsystems. Provide Northrop Grumman engineers as resources for these students as they learn how engineering can have a positive impact on environmental science and conservation.

ABOUT THE TURTLES

Turtle Tech system development and testing takes place on Florida's Space Coast and focuses on the turtle species there, including green, loggerhead and leatherback. Get to know these turtles and how they behave:

- Just one out of every 1,000-10,000 sea turtle hatchlings survive to adulthood.
- The gender of sea turtles is determined by the temperature in the nest. Cooler temperatures produce males and warmer temperatures produce females.
- Sea turtles are air-breathers, but they can stay underwater for up to five hours.
- Unlike other turtles, sea turtles cannot retract their flippers and head into their shells.
- The southeastern United States hosts the world's largest nesting cluster of loggerhead turtles.
- Leatherbacks are the largest of all turtles, reaching lengths of six feet and weighing over 2,000 pounds. They are listed as an endangered species by multiple countries, including the United States.

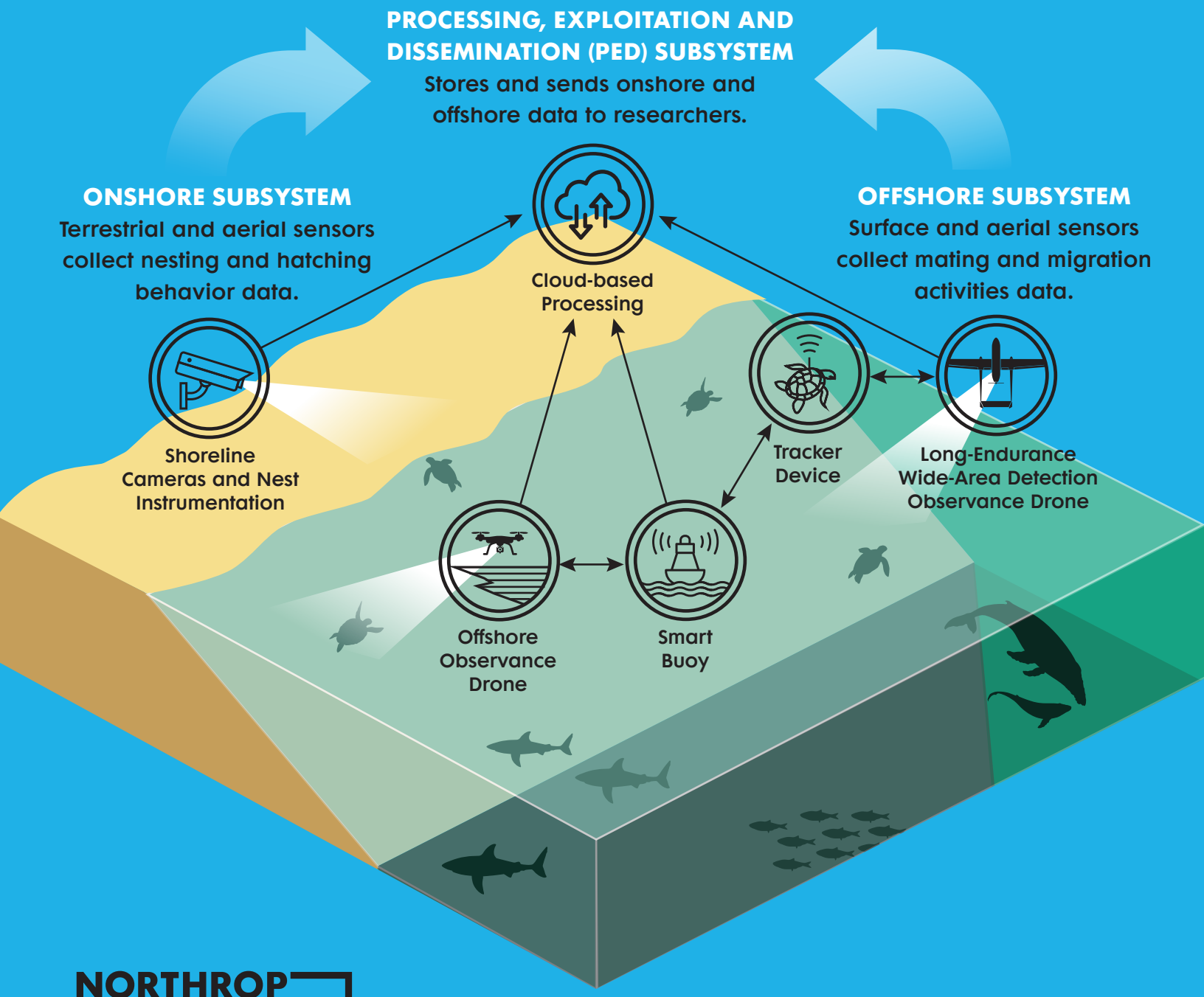
ADDITIONAL PROJECT PARTNERS

Northrop Grumman and the Brevard Zoo have partnered with additional teams from the following schools and organizations for this project:

- Brevard Public Schools
- Embry Riddle Aeronautics University
- University of Central Florida
- Florida Atlantic University
- James Madison University
- University of Florida
- Barrier Island Center

NORTHROP GRUMMAN

SYSTEM COMPONENTS: The observation and data collection system designed by Northrop Grumman for this project covers two different geographic domains: onshore nesting and offshore migration. Three integrated subsystems combine to deliver high resolution data to the researcher and include the following "core system" components and performance extensions:



NORTHROP GRUMMAN