

# From the Great White North to the Sunshine State

As white sharks travel from Canada to Florida's warmer waters, international research and collaboration heat up

BY STEPHANNIE KETTLE

It's not just people who find refuge in the warm temperatures of the Southeast U.S. during winter — even some great white sharks (*Carcharodon carcharias*) are “snowbirds” that travel from as far north as Canada down to Florida.

Scientists on a fall 2018 expedition aboard the research vessel OCEARCH, including Mote Senior Scientist and shark researcher for 30-plus years Dr. Robert Hueter, located a hotspot of these apex predators near Lunenburg, Nova Scotia, Canada. Hueter served as Expedition Chief Scientist for the month-long trek, as 25 scientists from 18 institutions came together to better the collective knowledge of one of the world's most recognizable, yet still poorly understood, marine predators.

This expedition was the latest in a series of multi-institutional efforts to study white sharks aboard the OCEARCH vessel in the Northwest Atlantic Ocean, begun in 2012. Expedition partners tag, track and collect samples from the North Atlantic white shark population to learn important life-history details needed for management and conservation, including where these sharks migrate, mate and give birth.

During the trip, seven great white sharks were caught, sampled, measured and released. Each shark only spent about 20 minutes on a specialized platform on the OCEARCH vessel, as researchers buzzed around the shark like worker bees to gather various samples, measure the shark, and attach a location-tracking satellite tag on its dorsal fin.

Some samples taken during the expedition will be used to continue important projects — such as blood samples for studies of health, stress physiology and reproductive status, and samples of the bacteria associated with these animals. Other projects served by this expedition are new — for instance, fecal samples for DNA analysis to better understand what prey the sharks consume, and samples of blood, tissue and feces to check for impacts of microplastics, a widespread issue in oceans around the world.

Six of the seven sharks sampled during the expedition were outfitted with satellite tags, allowing for researchers to continue watching the sharks' movement and behavior from their laboratories onshore.

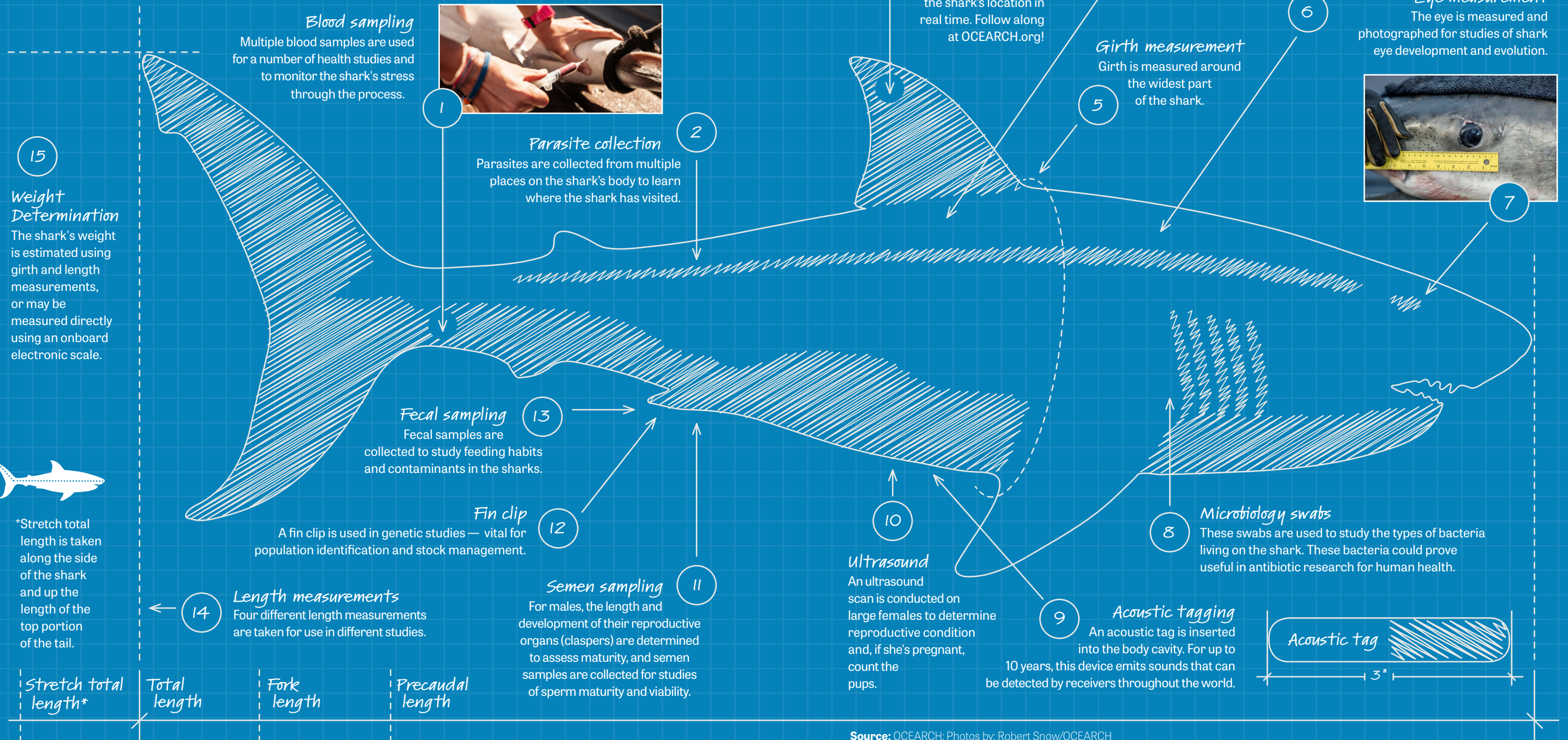
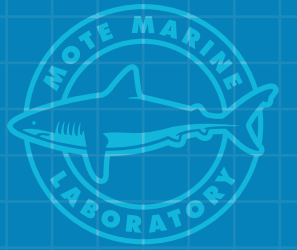
One of the male sharks, “Nova,” tagged on Sept. 24 in the coastal waters of Nova Scotia, quickly traveled south, reaching the Atlantic waters off the Florida Keys in late November. Then Nova made the trek around the Keys into the Gulf of Mexico, and on Dec. 23, his tag “pinged” about 150 miles offshore from Mote's own Sarasota campus, where Hueter has his laboratory. “It's as if Nova is following me!” Hueter quipped. Nova has traveled at least 2,225 miles since he was tagged in September. The public can follow Nova and other sharks tagged by OCEARCH on this expedition and on others, at [OCEARCH.org](http://OCEARCH.org).

White sharks are ecologically important, widespread top predators in the world's oceans, but their lives remain largely mysterious and they are listed as “Vulnerable” on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species. They are considered a “Species At Risk” in Canada and are fully protected in Canadian waters, and landing them is prohibited in U.S. waters. Human activity has degraded the inshore nursery areas where pups (babies) are born and sheltered, and fishery bycatch has removed pups, growing teenagers and reproductive adults from the population. These losses have sparked growing concern, and ultimately, measures that are rebuilding the Northwest Atlantic population. White shark conservation is increasingly supported by the public, despite media frenzy over human-shark encounters or bites. The work of shark researchers aboard the OCEARCH vessel will prove key to conserving this species, no matter where these sharks spend their summers and winters. ■

Turn the page to learn more about shark sampling ▶

# Full-body exam: How OCEARCH scientists learn about white sharks

When a shark is caught, examined and released during an OCEARCH expedition, scientists take samples for multiple research projects and attach one or more electronic tracking tags to the shark. Many samples are taken at once, and the whole process takes less than 20 minutes.



Source: OCEARCH; Photos by: Robert Snow/OCEARCH