Investigating Locations and Causes of Sea Turtle Mortality in Virginia

A research study at the Virginia Insititute of Marine Science | Graduate Student Bianca Santos

The Problem: Hundreds of stranded sea turtles are washing up deceased on Virginia's beaches. For a majority of these strandings, cause of mortality is unknown

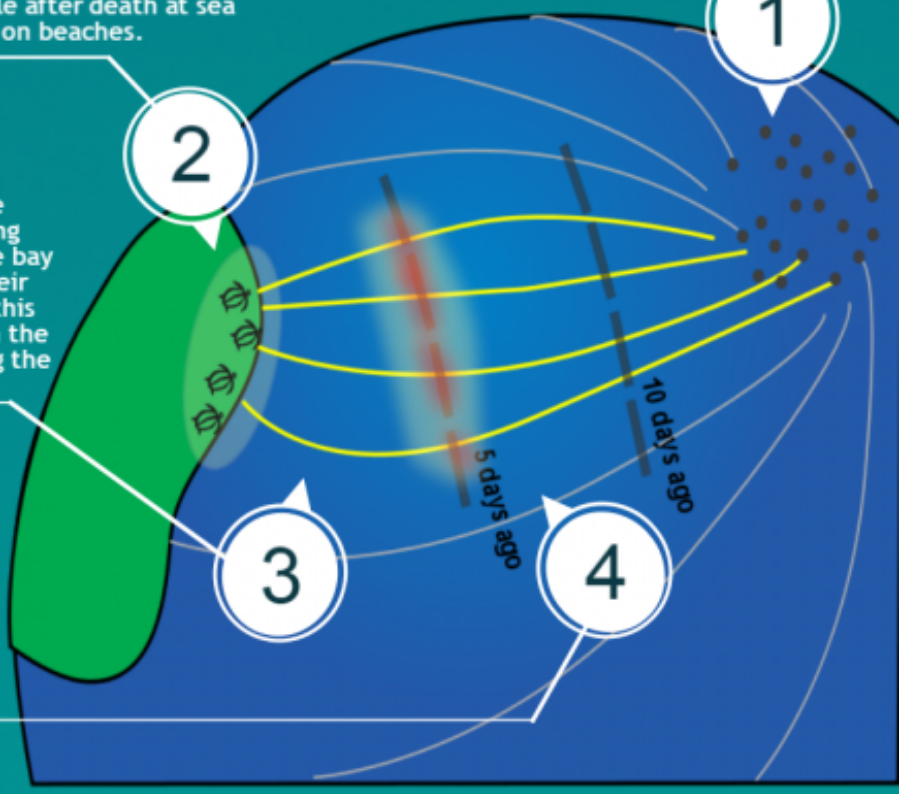
Objective: Determine likely locations and causes of sea turtle mortality in the Chesapeake Bay

I am using computer simulations to randomly release "particles," which represent passively drifting material in the Bay, to characterize areas where turtles may die. Particle movements are tracked forward in time based on physical oceanographic data, such as currents and winds.

Possible pathways of dead turtle remains, prior to their being found on Virginia's beaches, are identified. These trajectories represent the flotation pathway of a turtle after death at sea and before landfall on beaches.

One study is analyzing turtle carcasses to estimate how long turtles have been floating in the bay based on the conditions of their remains. Researchers can use this time estimate to track where in the bay turtles may have died along the modeled pathways.

Once the carcasses' drift paths, time spent drifting, and other data are analyzed, scientists can identify sea turtle death "hot spots" in Virginia's waterways and assess activities in those areas that may be contributing to turtle deaths.



Potential Sea Turtle Threats in the Bay

Cold Water Temperatures

Fisheries

Boat Strikes

Pollution

Disease