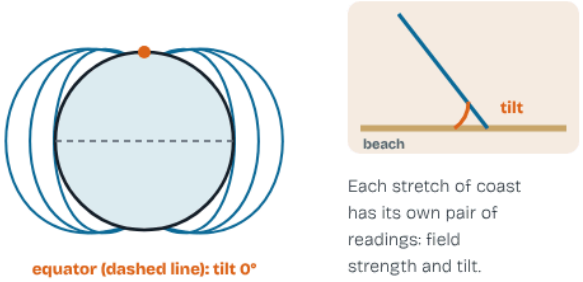
That is why

Why do sea turtles return to their home beach?

Each stretch of coast has its own magnetic signature. Hatchlings save it, and adults follow Earth's field back to it.

A A magnetic address for every beach

Field lines meet the ground at a tilt



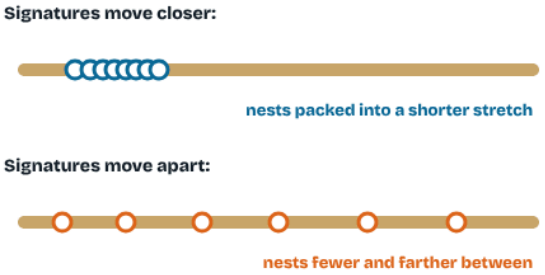
Each stretch of coast has its own pair of readings: field strength and tilt.

1 Born knowing the way out

Young loggerheads given the magnetic field near Puerto Rico swam northeast; those given the field near the Cape Verde Islands swam southwest. Both turns keep them in the North Atlantic Gyre, the loop of current around the Sargasso Sea. Missing it means cold water.

B Nests follow the field

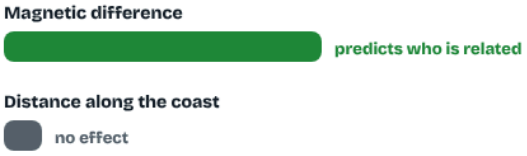
Florida's east coast, 19 years of nests



Largest sea turtle rookery in North America.

Same signature, same family

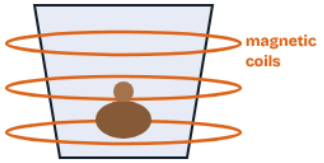
DNA from 834 nesting females at 20 beaches



Some turtles nest on a far beach with a matching field, like one on the opposite coast of Florida. Bars are schematic.

C Map and compass

The turtle "dance" test



Fields copied from the Gulf of Mexico to Maine; food came in only one. Turtles "danced" for it, and still did several months later.

Memory: hatchling to adult, ~20 years

Add radio waves:

× **compass (direction) lost**

✓ **map (the place) still known**

Two separate magnetic senses.

How they feel it: tiny magnetic particles in the brain are likely, but no one knows for sure.

Like a phone joining its saved home Wi-Fi: she recognizes a signal she saved as a hatchling.

Free for learning thatiswhy.com

Free for learning, teaching and research. Please credit: That Is Why, thatiswhy.com

Diagram: https://thatiswhy.com/diagrams/why-sea-turtles-return-home/ · Full guide: /why-sea-turtles-return-to-beach-where-they-were-born/