

## Where will they go?: A potential North America destination for loggerheads tracked by STRETCH

Jeff Seminoff, 17 August 2023 (updated 11 October 2023)

For the loggerheads currently being tracked as part of the STRETCH program, some natural questions are ‘where will they go?’ and ‘when will they get there?’ For turtles that have been tracked to North America in the past, most attention has been given to those that moved to the coast of Baja Mexico, and indeed the Baja hotspot has been the focus of many scientific papers and popular press. However, lower on the radar is the fact that the waters off southern California are also a potential destination, although perhaps only as a ‘stop over’ for south-bound loggerheads. The area we’re talking about is called the southern California bight (SCB), and on a map it looks like a bite out of a cookie along the State’s southern coast, breaking off at Point Conception in the north and the U.S.-Mexico border in the south.



The SCB is a productive area and home to a diversity of whale, dolphin, fish, and lower-trophic prey species. It is also the only area off California where loggerheads periodically occur *en masse*. These turtle aggregations in the SCB can number in the 10s of 1000s of individuals, and only occur during warm El Niño periods when local waters are their warmest, although solitary loggerheads are sometimes seen in the area outside these periods. As we’ve learned from Dana Briscoe (a STRETCH PI) and colleagues, it takes more than just warming of local California waters for loggerhead aggregations to be present. Importantly, the loggerhead influx also depends on sea water warming hundreds of miles off the coast of California, in a transition zone between the Central North Pacific (CNP) and eastern Pacific known by loggerhead scientists as the *thermal corridor*. It is very probable that most loggerheads in the North Pacific occur in the CNP, but for those located in proximity to this corridor when temperatures rise—when the high seas ‘gate’ opens—they have their chance to make a break for North America!

*When does the thermal corridor open?*

A good indicator of the opening of the thermal corridor is the presence of large numbers of loggerheads in the southern California bight. And for example, during the El Niño of 2014-15, the first flotillas of loggerheads in the SCB were seen on 28 November 2014 during a high seas NOAA research cruise. At the time, ship-based observers described hundreds of ‘floating pinecones’ occurring in close proximity to each other, usually near frontal zones. Similar scenes were reported again in January 2015 by the same research cruise, and again during the fall of 2015—nearly a year after the initial reports—by a NOAA aerial survey team. Thus, we know that the aggregations in the SCB can last for up to a year or more, but we don’t know when they start and how long they last in the region.



*A juvenile loggerhead 'pinecone' floating in waters of the southern California Bight in 2015  
(photo: P. Olsen)*

Even with the approaching El Niño, it is too early to tell if loggerheads will come in huge numbers to SCB waters. After all, the first signs of loggerhead flotillas in the region during the last El Niño didn't occur until late in the Fall. And it may be a similar situation for the current El Niño that is brewing in the Pacific. So far this year there have been only sporadic reports of loggerheads, with two confirmed individuals seen in the past weeks 10-20 miles offshore from Dana Point in Orange County, California. These sightings were initially reported to the NOAA West Coast Sea Turtle Sightings Survey, and we'll be paying close attention to see if more community-sourced loggerhead sightings come in. For now, we continue to monitor sea water temperatures in the thermal corridor area, and track the whereabouts of our 2023 cohort of satellite tracked turtles. If the conditions are right, we just might follow a few of them all the way to the coast of California!



*A loggerhead spotted off Dana Point, California in August 2023  
(photo courtesy Danawharf.com)*