

Tracking a Sea Turtle from a Satellite

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	Day Number	Latitude	Longitude	Distance (km)
1	0	+5° North	130° East	0
2	249	+10° North	155° East	2813
3	488	+30° North	170° East	2707
4	705	+10° North	180° East	2446
5	1099	+40° North	150° West	4453
6	1347	+32° North	120° West	2831

Plot the points listed in the table above to track the sea turtle from the start of its journey to its end. Use your map to answer these questions:

Question 1 - In what part of the world did it begin its trip?

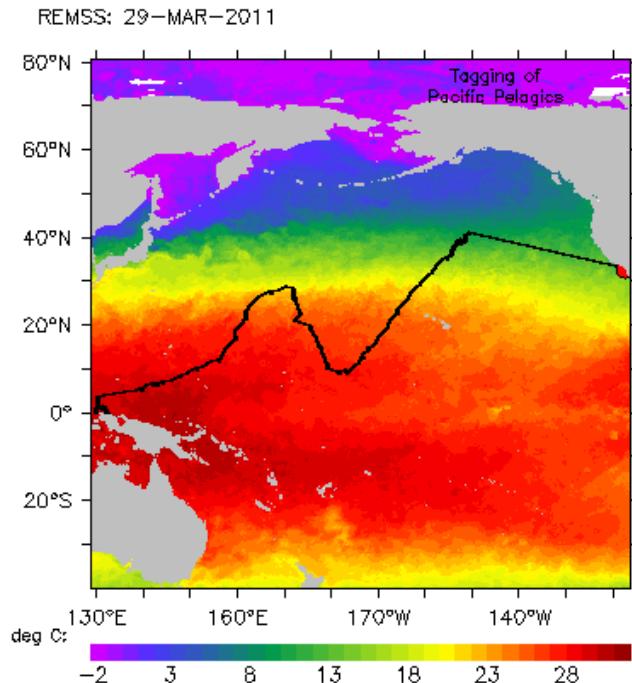
Question 2 - Where did the turtle end up?

Question 3 - How many total kilometers did the turtle travel?

Note to teacher: The data was obtained from the Census of Marine Life's Tagging of Pacific Predators (TOPP) website at <http://www.topp.org/>

The data is for a Leatherback Sea Turtle Tag Number 2607020, PTT number 23662, between July 22, 2007 to March 30, 2011. The actual data is shown in the image below, which superimposes the track onto a satellite map of the ocean temperature in degrees Celsius (see color bar).

http://las.pfeg.noaa.gov/TOPP_recent/TOPP_tracks180.html?species=0&zone=10



Suggested answers:

Question 1 - In what part of the world did it begin its trip? - **New Guinea**

Question 2 - Where did it end up? **California**

Question 3 - How many total kilometers did it travel? (Hint: use a piece of string on a globe). $2813 + 2707 + 2446 + 4453 + 2831 = 15,250$ **kilometers.**

Extension Problem: Students can be asked to estimate the speed of the turtle in kilometers per day (about 11.3 km/d) or other units (miles per hour or miles per year etc..) where 1 km = 0.62 miles.

$$\text{MPH} = 11.3 \text{ km/day} \times (1 \text{ day} / 24 \text{ h}) \times (1 \text{ mile} / 0.62 \text{ km}) = 0.76 \text{ mph.}$$

$$\text{Miles per year} = 0.76 \text{ mph} \times (24 \text{ h} / 1 \text{ day}) \times (365 \text{ days/yr}) = 6,658 \text{ miles/year.}$$