

DOLPHIN RESEARCH CENTER

Mapping Cetacean Distributions

Whales and dolphins, referred to as cetaceans, can be found all over the world. Some species, such as the pantropical spotted dolphin and the striped dolphin, have fairly large geographic distributions centered around the equator. Other species, including the harbor porpoise and the Hector's dolphin, have much smaller geographical distributions. Many baleen whales, such as the blue whale and the humpback whale, migrate to spend part of the year in feeding grounds and the remainder of the year in their breeding grounds. The terms below describe these different types of distributions. Using classroom resources or information provided by your teacher, define each of the terms below. Give at least two examples of cetacean species that demonstrate each of these types of distributions.

Type of Distribution	Definition	Examples
Cosmopolitan (or circumglobal)		
Circumpolar		
Pantropical		
Coastal		
Pelagic		

Now it's time to examine the geographical distributions of some different species of cetaceans.



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The points listed below represent the latitude and longitude at which various species of dolphins have been observed. Use a red colored pencil to plot the coordinates listed for the Commerson's dolphin on the world map. Once you've finished plotting the points, use the red pencil to shade in the area(s) where the dots are grouped together. If there are several clusters of dots with large spaces between them, you can assume that these clusters represent separate regions inhabited by the species. Once you have finished this, continue by plotting the coordinates for the Hector's dolphin and the Amazon River dolphin and shading in the regions they inhabit. Make sure to use the proper colors!!

Commerson's Dolphin (Red)
46°S 70°E
47°S 69°E
49°S 70°E
47°S 71°E
40°S 60°W
45°S 60°W
45°S 65°W
50°S 60°W
55°S 60°W
60°S 60°W
60°S 54°W
50°S 67°W
55°S 75°W
60°S 73°W
70°S 70°W

Hector's Dolphin (Pink)
45°S 175°E
43°S 172°E
45°S 165°E
47°S 168°E
Amazon River Dolphin (Green)
5°N 60°W
0° 60°W
5° N 70°W
5°S 50°W
10°S 70°W
15°S 60°W
10°S 60°W
13°S 52°W
7°S 55°W

The humpback whale has a very large distribution, so this will be a little bit different. Plot the coordinates listed below. Once you have finished, connect the dots you have just plotted. Humpback whales can be found in waters everywhere BELOW the line you plotted!

Humpback Whale (Purple)	
65°N 170°W	75° N 0°
60°N 65°W	90°N 15°E
63°N 68°W	90°N 30° E
70°N 70°W	75°N 45°E
72°N 60°W	68°N 58°E
68°N 24°W	65°N 172°W
70°N 8°W	



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For the beluga whale, you will need to use the map that is centered around the North Pole.

Beluga Whale (Blue)		
56°N 166°E	75°N 36°E	60°N 90°W
60°N 168°E	78°N 10°E	72°N 100°W
58°N 164°E	83°N 75°W	74°N 110°W
72°N 137°E	75°N 60°W	71°N 122°W
75°N 128°E	72°N 64°W	70°N 130°W
75°N 120°E	68°N 78°W	74°N 145°W
78°N 115°E	68°N 60°W	72°N 150°W
81°N 90°E	63°N 53°W	74°N 170°W
79°N 75°E	60°N 60°W	70°N 178°W
75°N 60°E	56°N 60°W	60°N 172°W
82°N 34°E	62°N 70°W	65°N 168°W
78°N 52°E	57°N 80°W	72°N 160°W
73°N 44°E	63°N 83°W	58°N 150°W
70°N 50°E	57°N 80°W	63°N 180°
69°N 41°E	56°N 88°W	

Use your completed maps to answer the following questions.

1. What type of geographical distribution does the Hector's dolphin exhibit? The humpback whale? The beluga whale?

2. The Amazon River dolphin is not a land animal, but its distribution is within the northern part of South America. What explains this geographical distribution?



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3. The humpback whale migrates during the year. Summers are spent feeding in cooler waters, while winters are spent mating and calving in warmer waters. Where would you expect to find humpback whales during the summer—at a latitude of 0° or 75°S ?

4. Find the coordinates $75^{\circ}\text{N } 150^{\circ}\text{W}$ and $75^{\circ}\text{N } 180^{\circ}$ on the world map and mark them with an 'X'. Do these points appear close on the map? Now plot them on the circumpolar map. Are they geographically close? Would your perception of beluga distributions have been different if you had plotted it on the world map? If so, how?

Examining Changing Distributions

5. Examine the map provided by your teacher. This map shows the current distribution of Australian sea lion, as well as the historical range of the Australian sea lion (dating back to the 1700s). How do these two ranges compare?

6. Describe one possible natural cause of this change in distribution of the Australian sea lion. Also describe one possible human-related cause of this change.

