

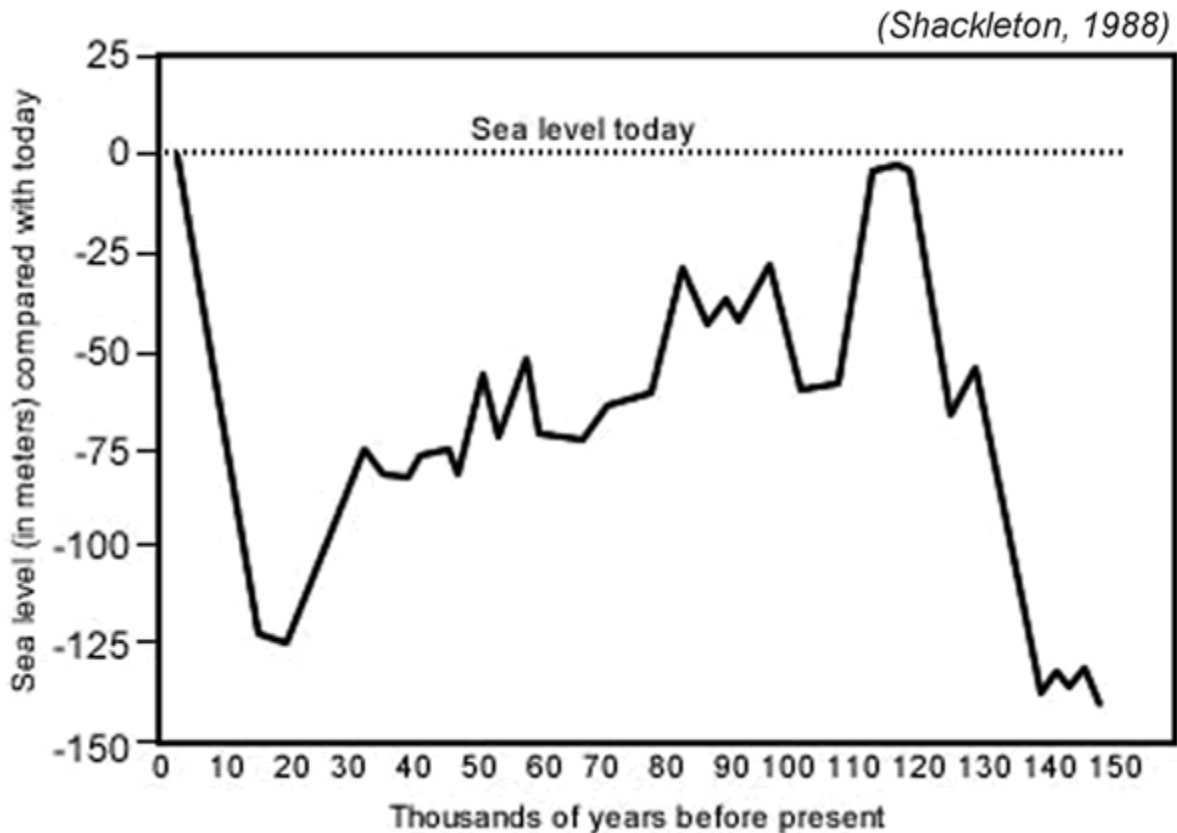
## Sea Level Change and Ancient Coastlines Lab

\*Please turn in this assignment\*

### BACKGROUND INFORMATION:

*Contour lines* are imaginary lines that connect places of equal elevation. If you were taking a hike along a hillside and not walking either uphill or downhill, you would be walking on a contour line. When contour lines are close together, the slope is very steep. When contour lines are far apart, the slope is very shallow. Maps that show the shape of the ocean floor with contour lines are called *bathymetric maps*.

Sea level change has happened at various times in Earth history. Global sea level can rise because glaciers melt, adding water to the oceans, or when plate tectonic movements shallow the ocean basins displacing water onto the edges of continents. It is a natural process that has gone on since there have been oceans on Earth! Over recent geologic history, sea levels have changed rapidly by geologic standards due to the repeated formation and melting of glaciers.



1. This graph shows how sea level has changes through time.

What is the vertical y-axis? \_\_\_\_\_

What is the horizontal x-axis? \_\_\_\_\_

2. Approximately how high was the sea level... (*compared to today's sea level*)

18,000 years ago? \_\_\_\_\_

90,000 years ago? \_\_\_\_\_

40,000 years ago? \_\_\_\_\_

140,000 years ago? \_\_\_\_\_

When sea level falls, the coastline moves in an oceanward direction.

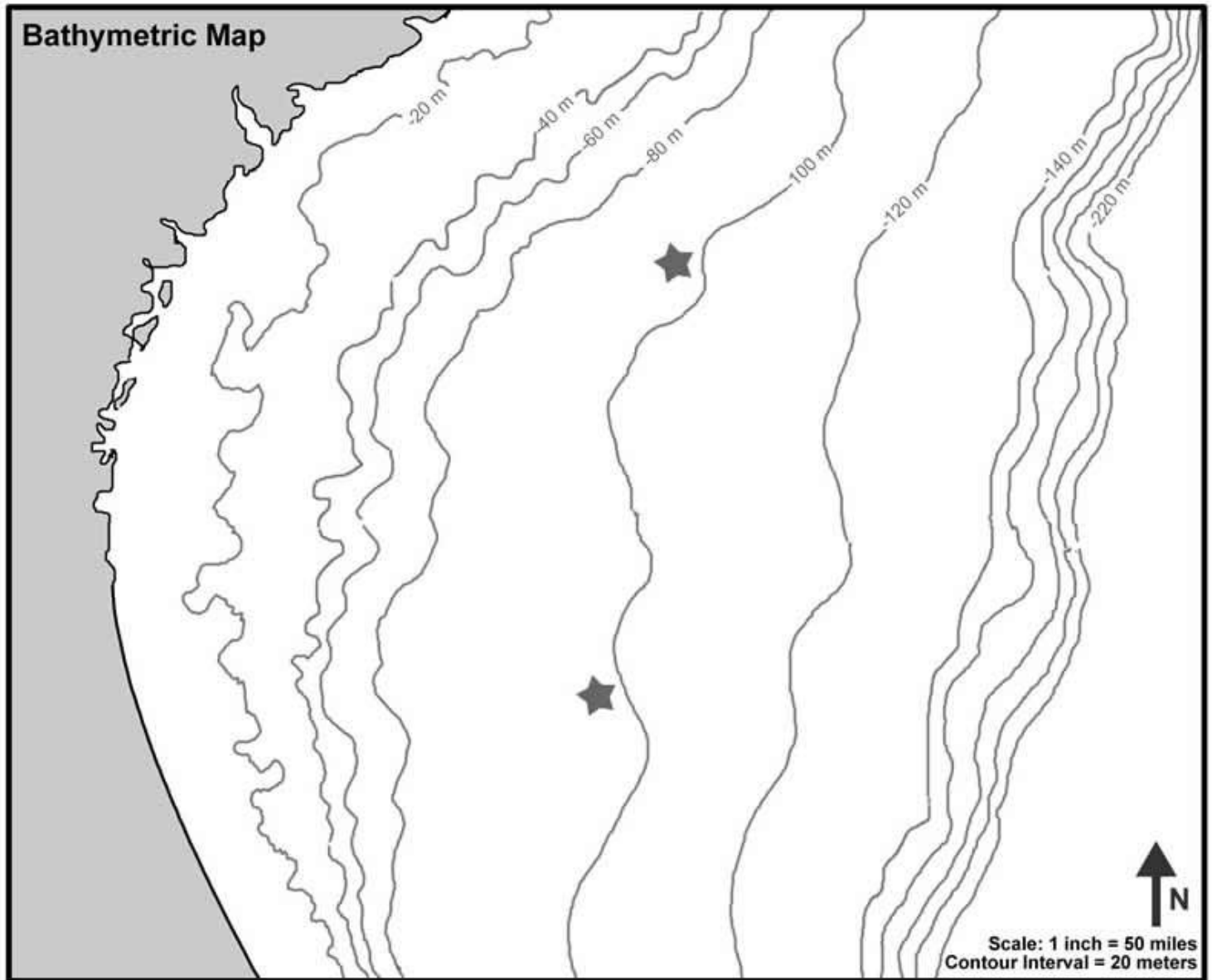
When sea level rises, the coastline moves in a landward direction.

A bathymetric map shows the depth of an ocean or lake.

Contour lines connect points of equal depth below present sea level.

3. On the bathymetric map below, indicate where the coastline would have been at each of these times.

- Draw each coastline as a line on the map in a different color.
- Fill in the key to indicate which color matches which time.



Key:

- 18,000 years ago
- 40,000 years ago
- 90,000 years ago
- 140,000 years ago

4. The two stars show the locations of ancient archeological sites discovered by scuba diving archeologists. They found that these communities lived at an ancient coastline and survived on a diet of fish. Given your knowledge of the changing sea level from the graph on the front page, how old could these archeological sites be? \_\_\_\_\_  
(Hint: < 20,000 years)