

INVESTIGATING ISOHALINES: GEOGRAPHIC DISTRIBUTION OF SEA SURFACE SALINITY

INTRODUCTION

Which regions of the sea are saltiest? Which have the lowest salinity? The salinity of the surface water depends on precipitation and evaporation. In regions with high rainfall the ocean surface becomes diluted with fresh water and the salinity is reduced. On the other hand, evaporation can exceed precipitation in regions where the SST is high and the amount of solar radiation is great. High evaporation has the opposite effect on salinity, it takes away fresh water leaving the dissolved salts behind, thus increasing salinity. In this investigation you will map the distribution of salinity across the globe. The attached map shows the salinity boundary lines, known as isohalines.

PROCEDURES

- 1- Using a set of colored pencils, pens or water colors, create a “key” or a legend by choosing a different color for each salinity value shown on your map of the isohalines. [Suggestion: use dark colors for high salinities and light colors for low salinities].
- 2- Begin by naming the countries and continents on your map filling-in the white rectangular blocks.
- 3- Finally, using your color key, fill-in the regions of the ocean that correspond to the different surface water salinity values.

ANALYSIS OF DATA

- A. List the ocean regions that have the highest sea surface salinity.
- B. List the ocean regions that have the lowest sea surface salinity.
- C. Describe the distribution of sea surface salinity patterns as a function of latitude.
- D. After studying a map showing the prevailing ocean surface currents, describe the distribution of sea surface salinity patterns as a function of surface currents.
- E. List as many reasons as you can think of to explain why places like the Red Sea and the Mediterranean Sea have such high surface salinities.

Name _____ Period _____

