



### 5-Year Comparison of Worldwide Coral Bleaching Data

**Background:** In this activity, GIS (Global Information Systems) will be used to observe and evaluate coral bleaching collected worldwide. Coral bleaching will be defined and data from January through December in a 5-year period will be compared to determine the progression or decline of coral bleaching throughout the world's coral reef system. Students should be familiar with the following terminology: global warming, seasonal climate variations, and coral reef systems.

**Question:** Has coral bleaching increased or decreased during the last five years?




**Hypothesis:** \_\_\_\_\_  
\_\_\_\_\_

**Materials/Resources:**

- Internet access to the following website: *ReefBase: Interactive Mapserver* (<http://reefgis.reefbase.org/mapper.asp>)
- 5-year Coral Bleaching Data Sheet

**Classroom Set-up:** This activity is designed to be completed in one 60-minute class with students working in groups of 5 students, each student collecting data on one year in the dataset. Additional class time is required if students complete this activity independently.

**Procedures:** Log on to the ReefBase website and locate the menu bar along the left side of the page. Locate the **Coral Bleaching** link and click this link to learn the definition of coral bleaching and the color-coded scale of bleaching severity that is used in the dataset. This scale is recorded on your data sheet for easy reference. Close this screen so that the ReefBase World Map is visible. Click the check box beside **Coral Bleaching** to secure this dataset. Click the **Coral Reefs** box to remove this check and then Click the drop-down arrow beside **ReefBase World Map** (found above the world map) to locate the **Bleaching and Sea Temperatures:** section that contains the datasets for the selected 5-year sequence. Start with the January dataset for the first year selected and record the number of coral bleaching locations along with their severity on the data table. Repeat this procedure for each of the 5 years in your selected 5-year sequence. When you have completed your data table, analyze your results, compare them with the rest of the dataset from your group, and communicate your findings below.

HANDY KEYS ON THE REEFBASE GIS	
Restore World Map 	Click and drag your mouse to zoom in on an area of reef for a more accurate count.  






**Data Collection and Analysis:** (See 5-year Coral Bleaching Data Sheet)

**Conclusion:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_






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### 5-Year Comparison of Worldwide Coral Bleaching Data Coral Bleaching Data Sheets

YEAR	MONTH	CORAL BLEACHING OCEAN/SEA LOCATIONS	CORAL BLEACHING SEVERITY				
			 none	 unkn	 low	 med	 high
	January						
	February						
	March						
	April						
	May						
	June						
	July						
	August						
	September						
	October						
	November						
	December						






#### Coral Bleaching Scale

-  no bleaching
-  severity unknown
-  low bleaching
-  Medium
-  High






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