

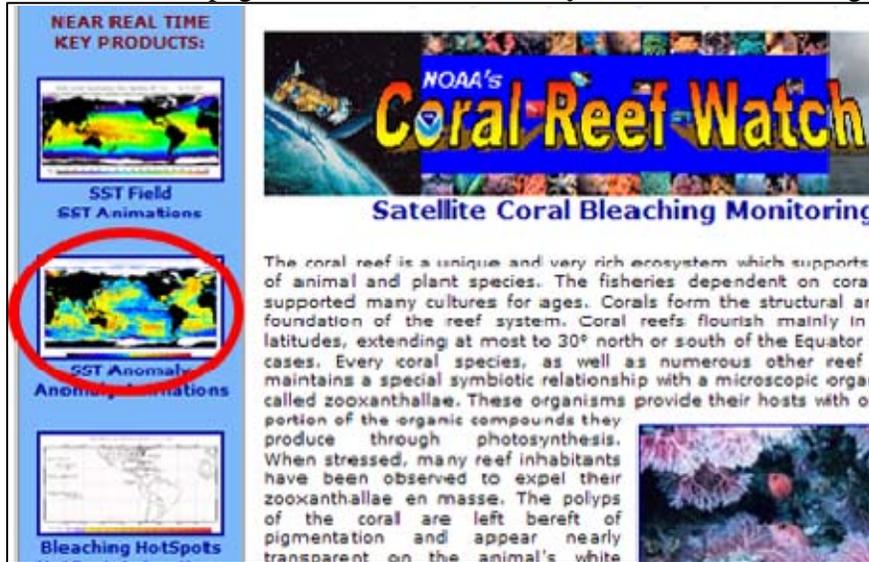


The goal of these hands-on exercises is to reinforce the concepts taught in the online tutorial, and to familiarize users with our website. For each exercise, please follow along, starting from the main page of the NOAA Coral Reef Watch website: <http://coralreefwatch.noaa.gov/satellite>.

SST anomaly exercises

1. For the Caribbean image, 01 November 2007, which areas were unusually warm/cool?

a. On the CRW front page, look for **SST Anomaly** in the left-hand navigation bar.



b. This takes you to the page for the current year of the SST Anomaly product: the latest image at the top, and an archive table below. Scroll down below this archive table, to find the link to 2007 data.

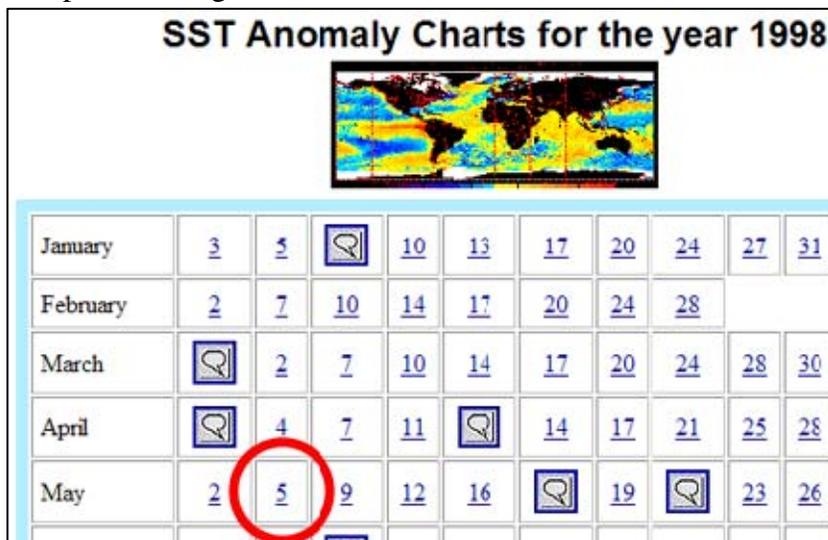
c. There will be an image at the top of the page, with an archive table below. Scroll down in the table to find November 1st, then click on **Caribbean**.

	W.Hemi	W.Hemi	W.Hemi	W.Hemi
November	1 Caribbean	5 Caribbean	8 Caribbean	12 Caribbean
	E.Hemi	E.Hemi	E.Hemi	E.Hemi
	Global	Global	Global	Global
	Full Global	Full Global	Full Global	Full Global
	Pacific	Pacific	Pacific	Pacific
	W.Hemi	W.Hemi	W.Hemi	W.Hemi
December	3 Caribbean	6 Caribbean	10 Caribbean	13 Caribbean
	E.Hemi	E.Hemi	E.Hemi	E.Hemi
	Global	Global	Global	Global
	Full Global	Full Global	Full Global	Full Global
	Pacific	Pacific	Pacific	Pacific

- d. What areas are warmer than the long-term mean? Which areas are cooler? (*See #1 on the answer page.*)

2. Compare the global SST anomaly on May 5th, 1998, to the SST anomaly one year later. What change do you see in the global anomaly patterns? What might have caused this change?

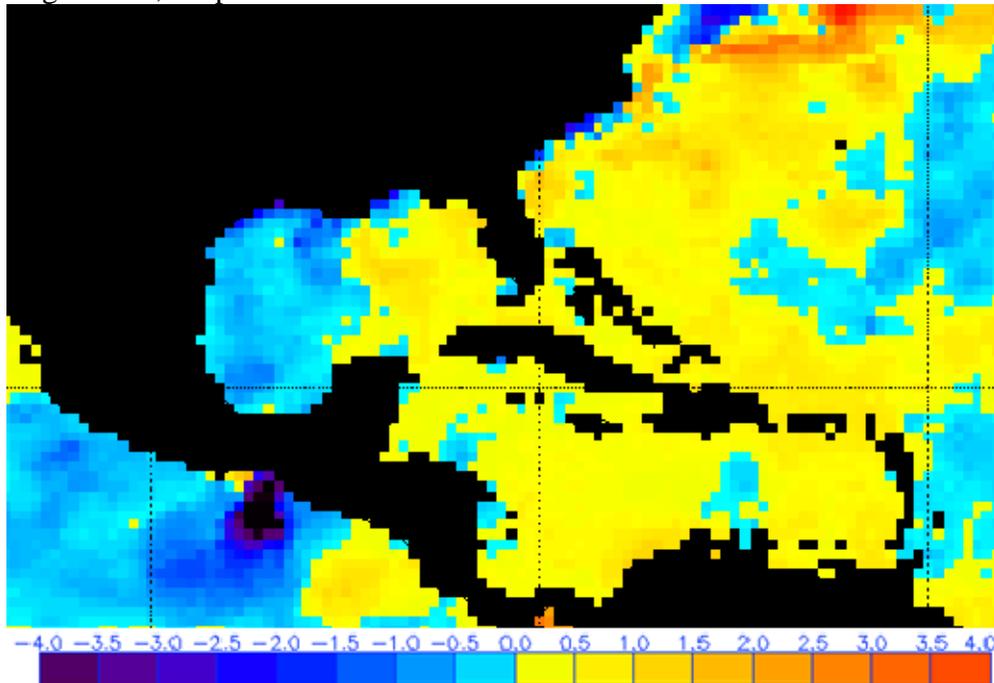
- a. Navigate back to the 2007 SST anomaly page, then scroll down below the archive table until you see other years. Click on **1998 Anomalies**.
- b. This takes you to the archive page for 1998. Right-click on the link for May 5th and open the image into a new browser window or tab.



- c. Now go to the SST anomaly archive page for 1999. Right-click on the link for May 4th and open the image in a new browser window or tab.
- d. Compare these two global images, one year apart. What changes do you see in the SST anomaly patterns? What might have caused these changes? (*#2 on the answer page.*)

Answer sheet: SST Anomaly

1. Areas in yellow to orange are above the long-term mean for November 1st in that area. Parts of the Gulf Stream current, east of the US coastline, are the furthest above the mean—but all of the central Caribbean and eastern Gulf of Mexico are above average. The western Gulf of Mexico is cooler than the mean. In addition, there is a small area off the Mexican west coast that is more than 3.5°C below the mean—this is probably an upwelling of cold, deep water.



2. Almost everywhere that was warmer than the mean in May 1998 was cooler than the mean in May 1999. This is especially evident along the equator in the Pacific: a huge warm anomaly that was present in 1998 has switched to cooler-than-average one year later. The anomalous warmth in the equatorial Pacific is characteristic of an El Niño period; in fact, 1998 was one of the strongest El Niños on record. This pattern causes many areas of the world's tropical oceans to be warmer than average. By 1999, the equatorial Pacific had switched to being cooler than average—characteristic of La Niña. This pattern causes many other areas to be cooler than normal also, but it does lead to above-average temperatures in some areas of the tropics. This period caused the worst global episode of coral bleaching. It is estimated that 16% of the world's coral reefs were killed during this 1998 El Niño/1999 La Niña.

