

NOAA *CoastWatch*
OceanWatch
(My Twenty Years in the Valley of
Death)

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NOAA Coast*W*atch

The Challenge

Deliver operational near real-time high resolution satellite data and products for the U. S. coastal ocean to:

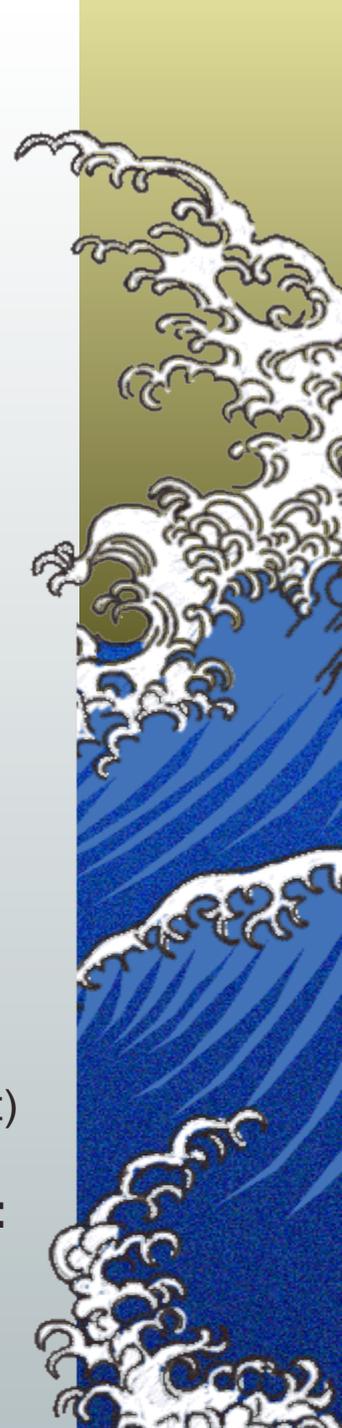
- ▶ federal, state, and local governments
- ▶ marine scientists
- ▶ coastal resource managers
- ▶ educators
- ▶ public



NOAA Coast*W*atch

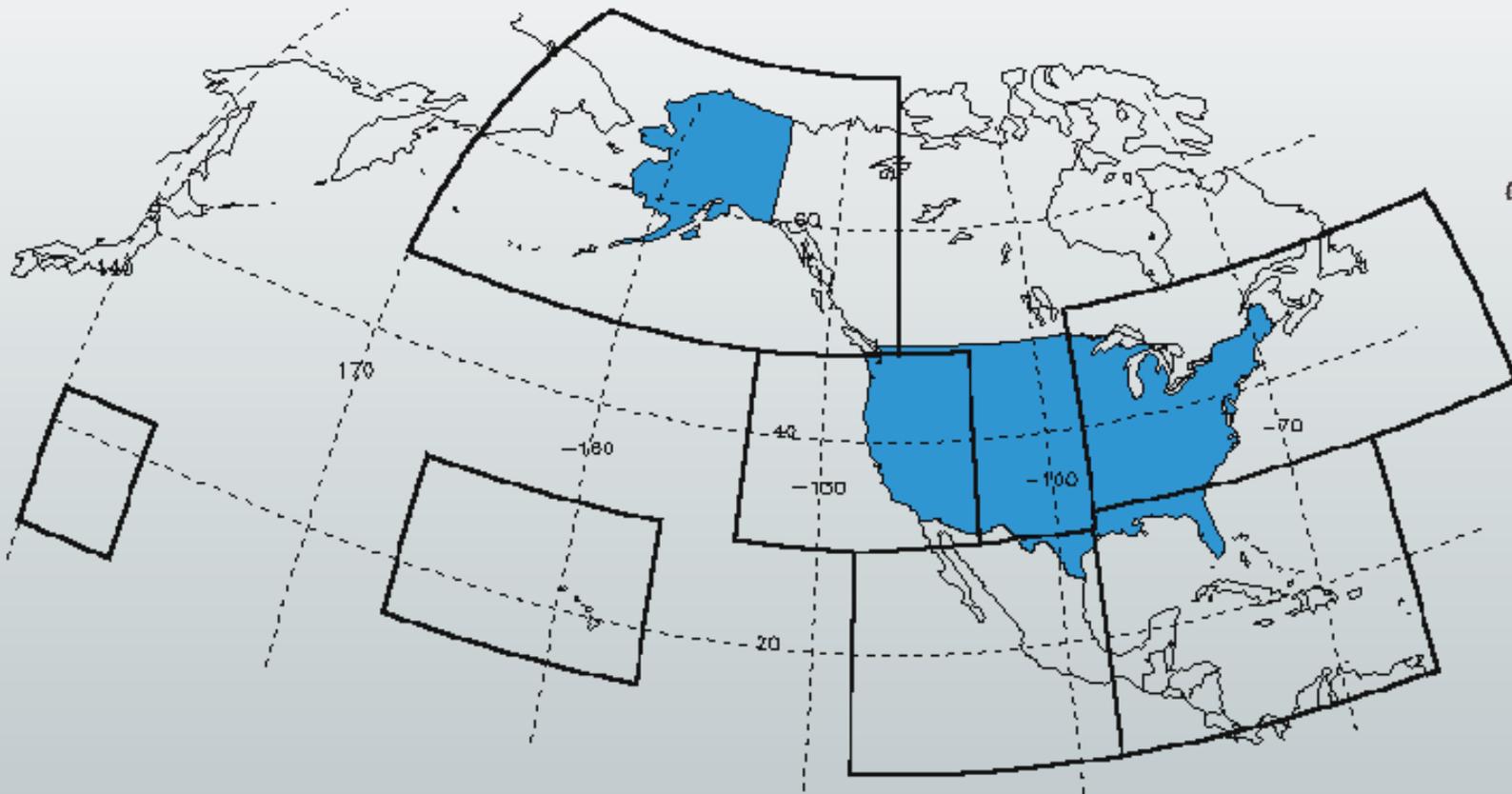
Key Events

- ▶ **North Carolina Harmful Algal Bloom 1987:**
 - Trigger event
- ▶ **Coastal Ocean Program 1990:**
 - Regular funding established (research oversight)
- ▶ **NOAA CoastWatch operational 1991:**
 - Complete national coverage established (Hawai' i)
- ▶ **CoastWatch in NESDIS base budget 1994/1995:**
 - Program becomes fully operational
- ▶ **Freedom of Information Act 1997:**
 - Full and open access
- ▶ **Management:**
 - NODC ('87- '92), OSDPD ('92- '00), ORA ('00–present)
- ▶ **OceanWatch: Commerce budget guidance (FY 2003):**
 - Develop with existing resources (\$680K)

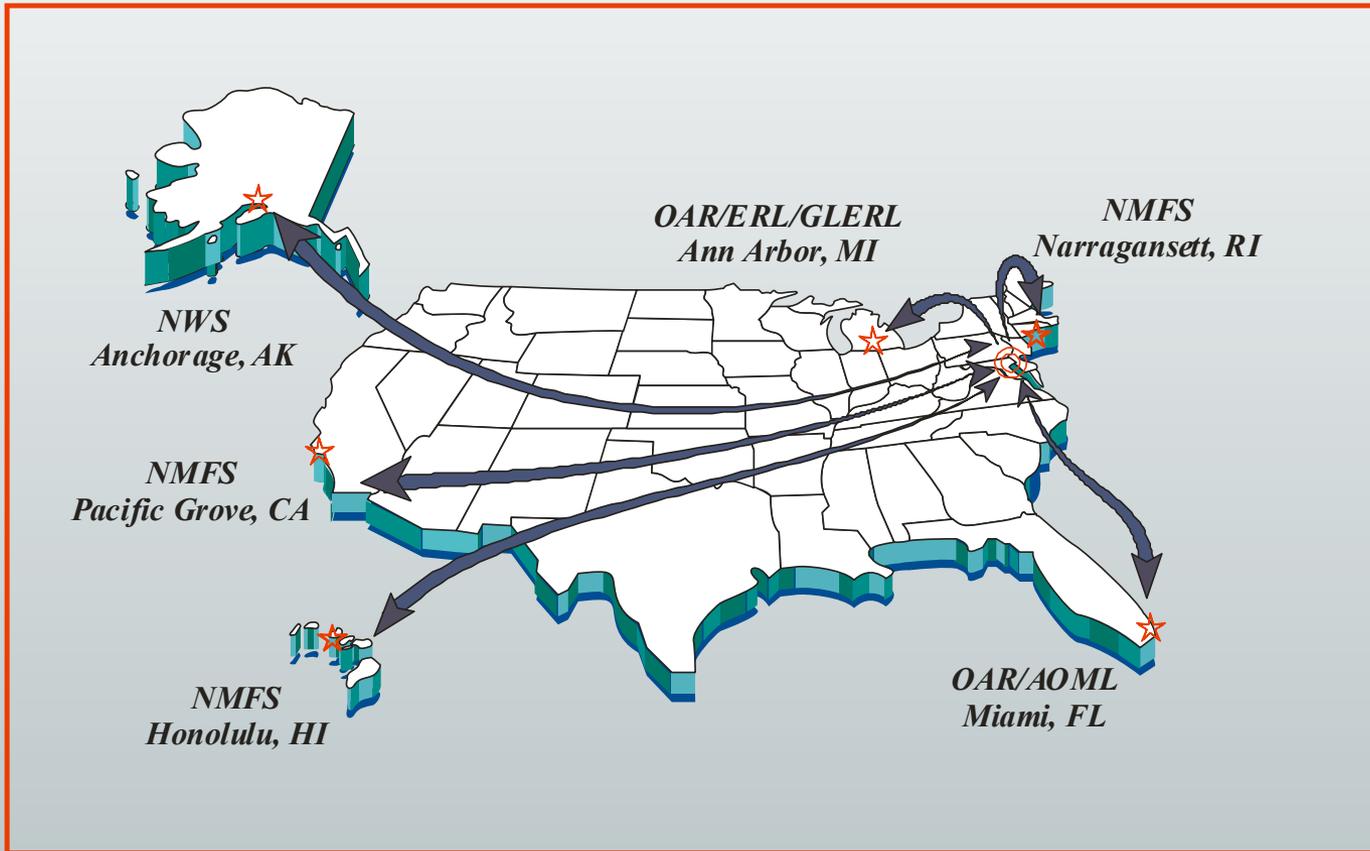


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CoastWatch Geographic Coverage (2001-2002)



National and Regional Centers



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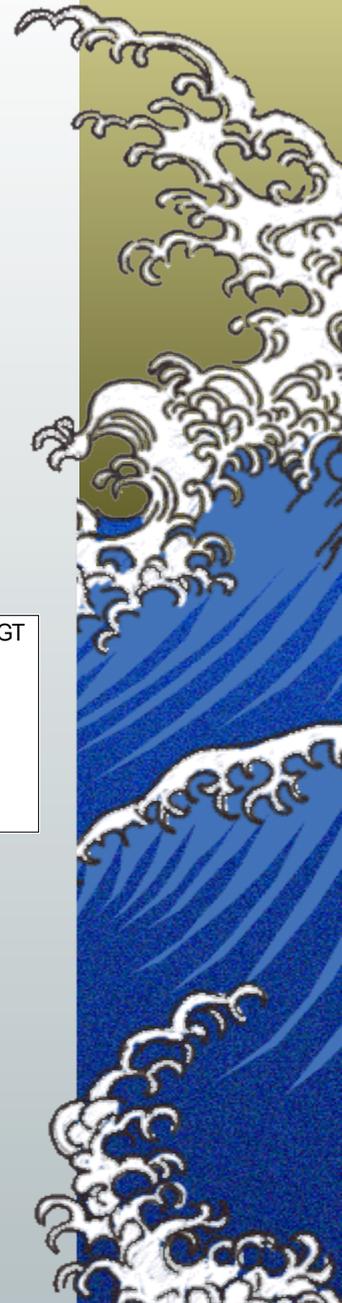
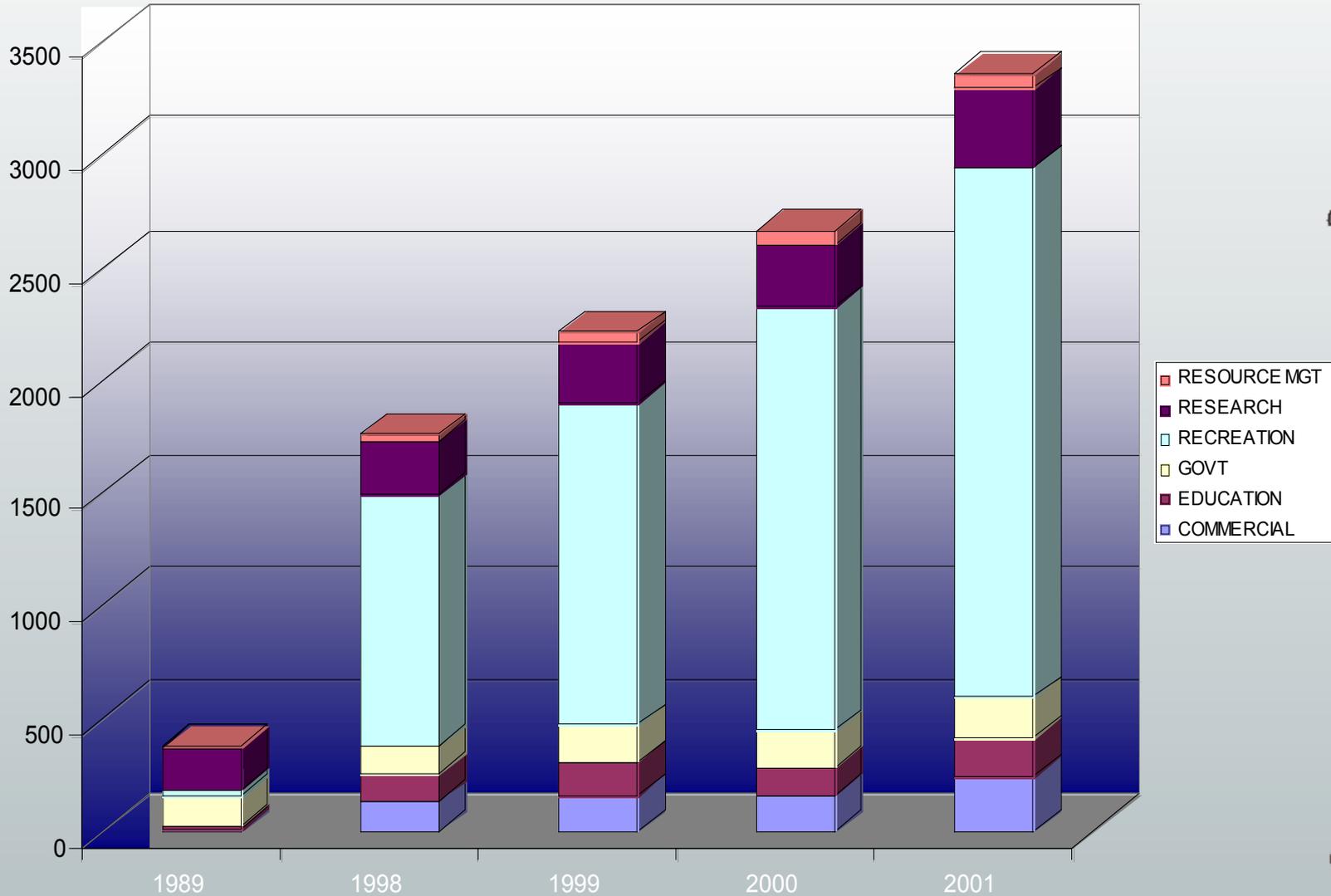
Program Baselines

- ▶ \$1.4M and 1 FTE (ORA)
 - Associated manpower: 20 FTEs
- ▶ 14,000 registered users (as of April 2003)
 - Recreational users largest segment
- ▶ Three product types produced
 - SST, ocean color, ocean surface winds
- ▶ 555K Observational generated annually (Central only)
- ▶ Five active distributed regional nodes – NOAA laboratories and offices (three Line Offices)
- ▶ Six environmental satellite systems: US, non-US, and commercial – 9 TB communicated via Internet



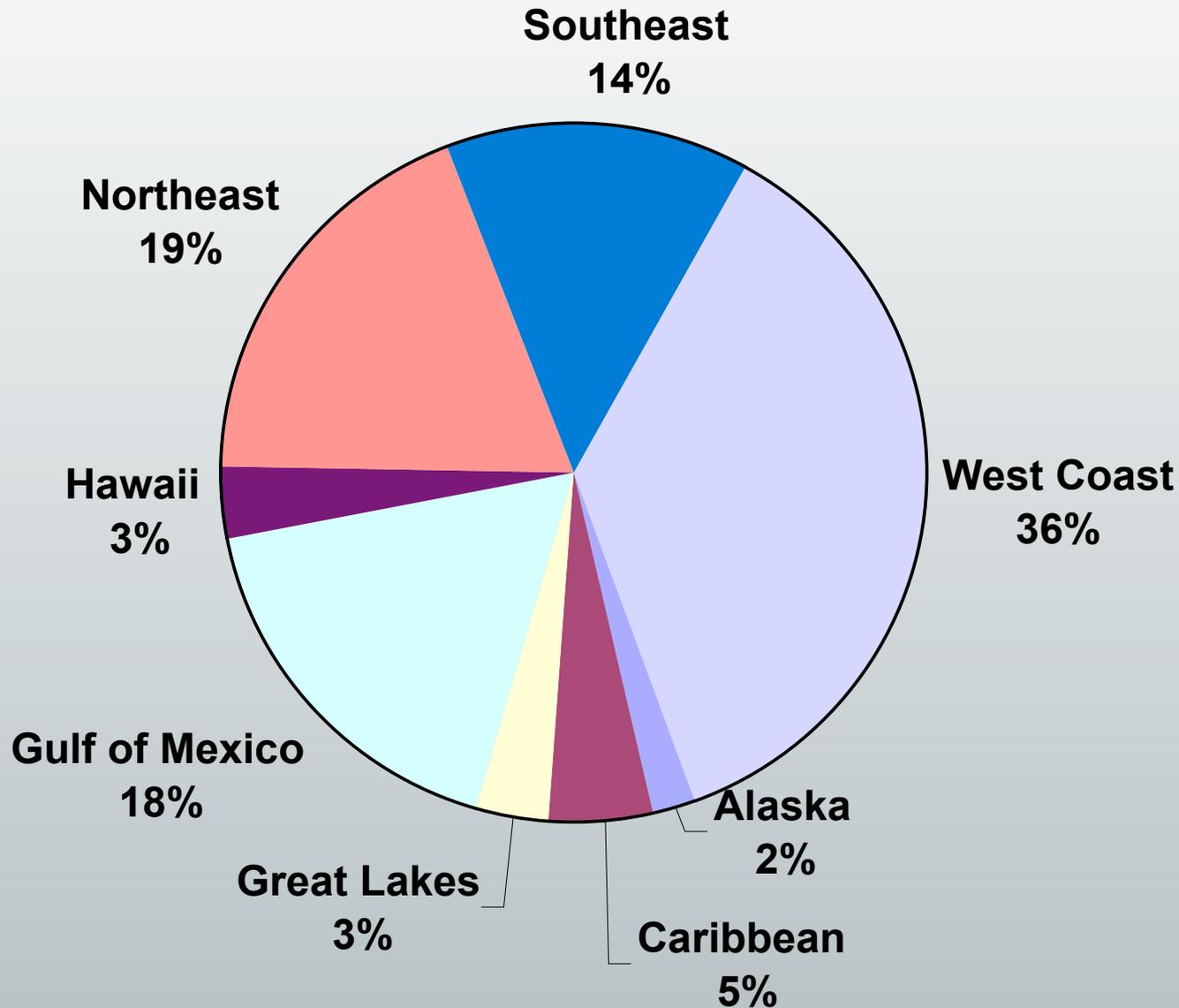
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Annual Registrations by Category



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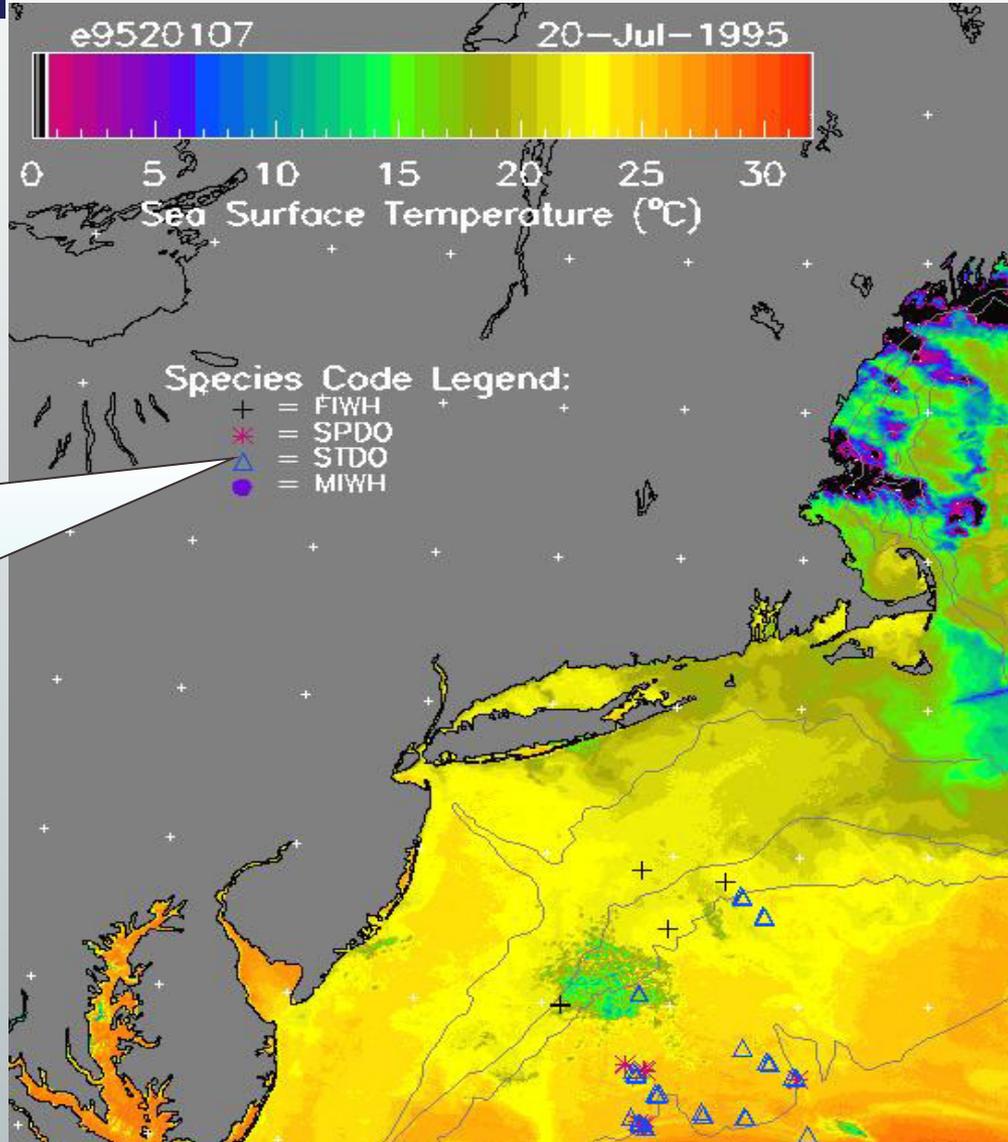
User Distribution by Regional Node



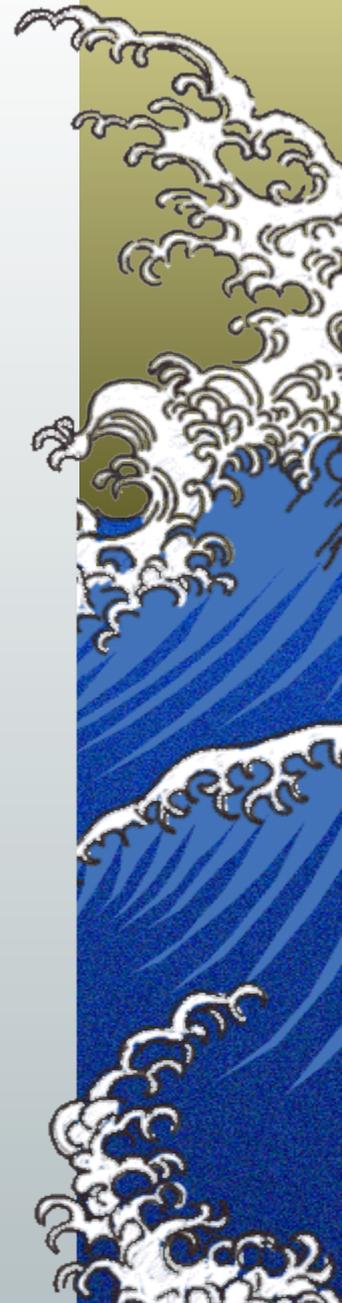


Regional Products

Marine Mammal Distribution



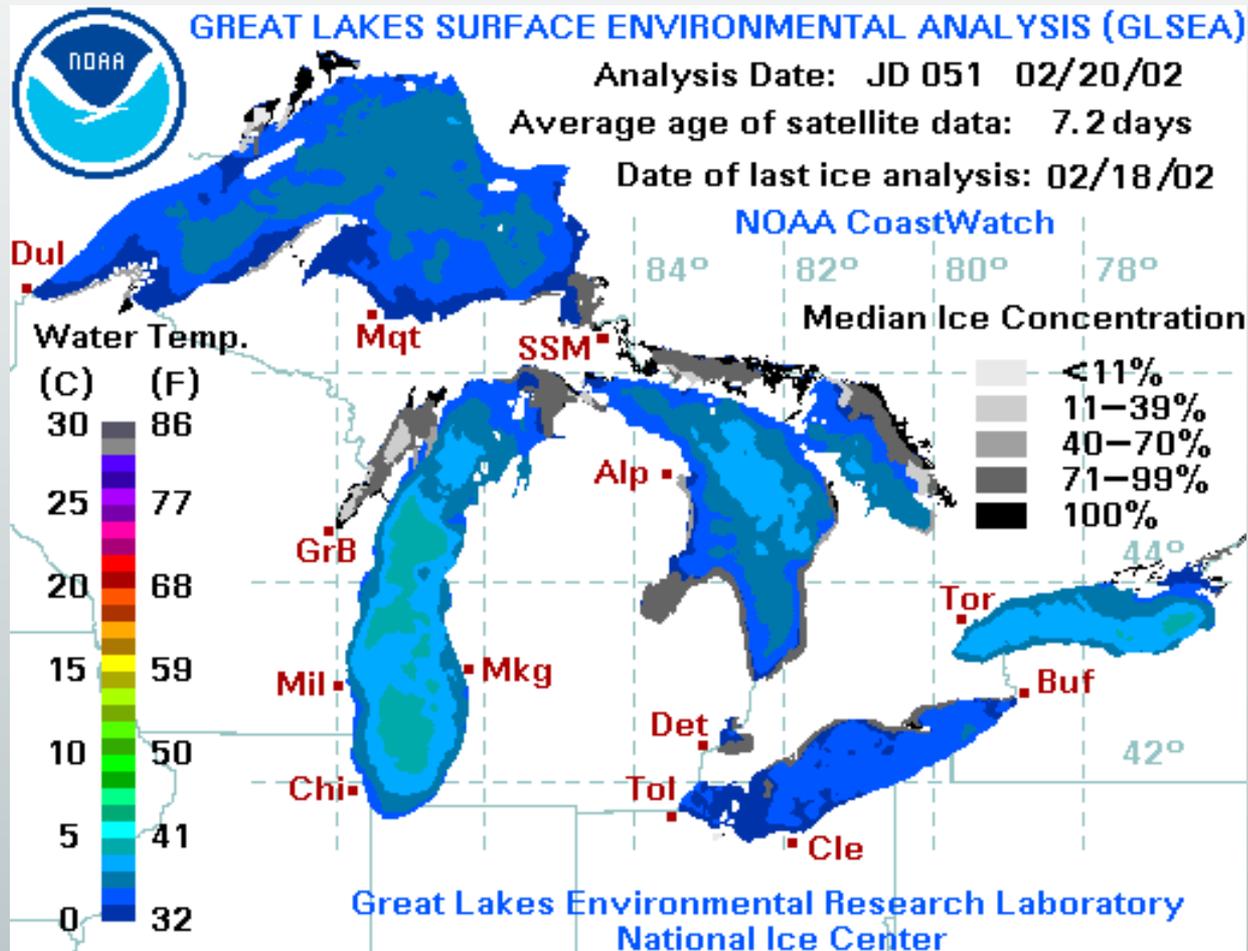
- + Fin Whale
- ❓ Spotted Dolphin
- Δ Striped Dolphin
- ❓ Mink Whale





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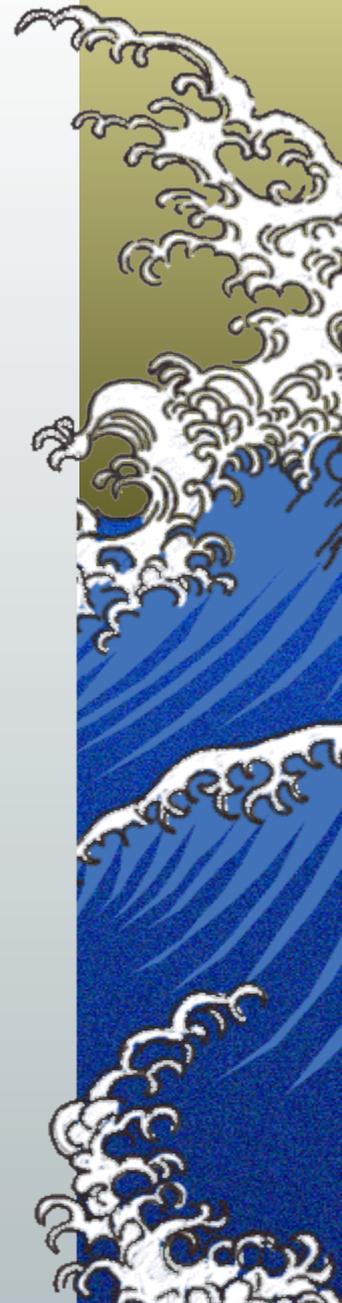
SST and Ice Extent

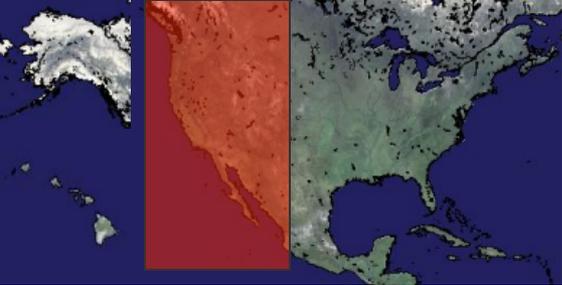


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Products Used by Regional Nodes

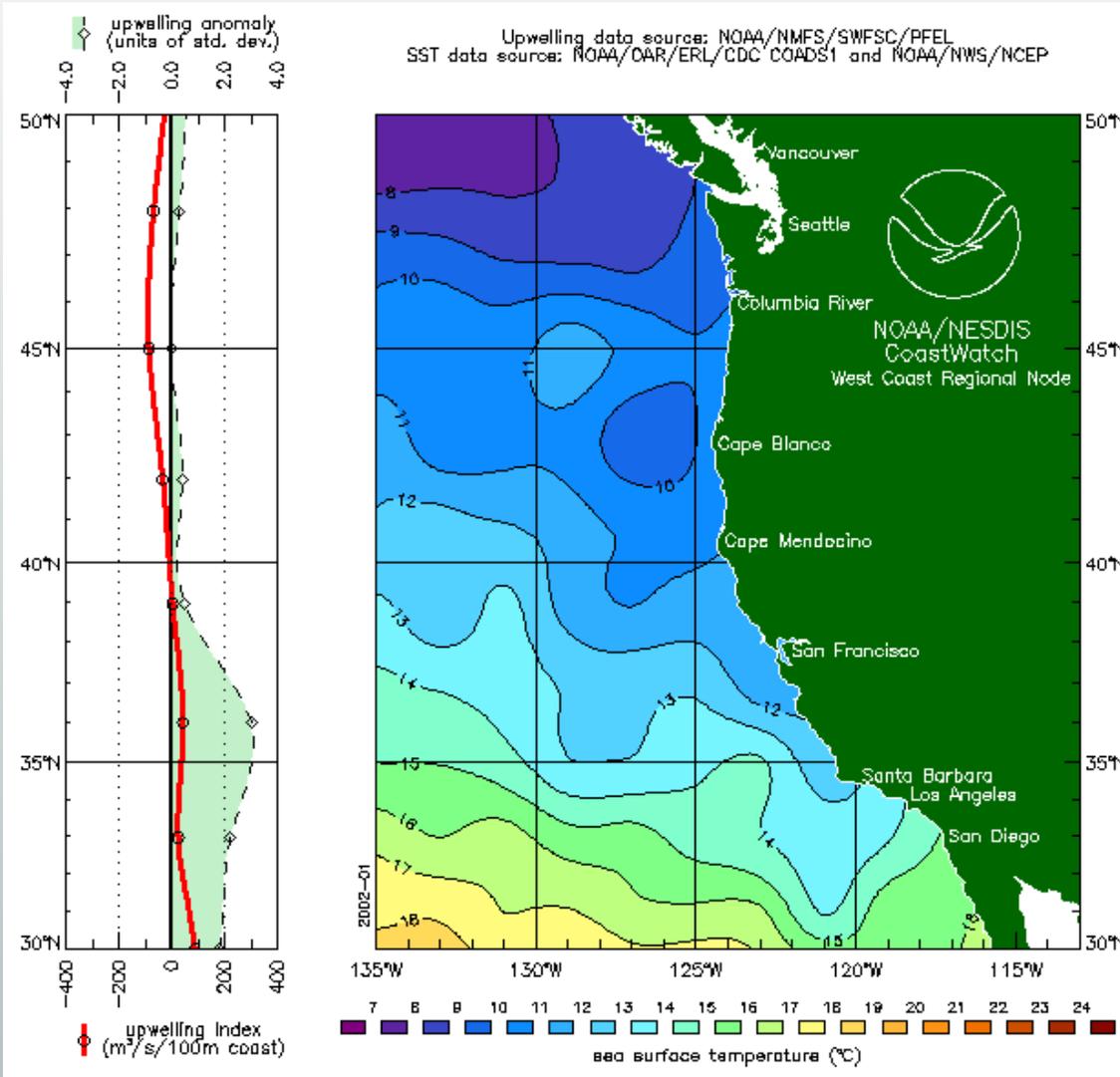
	Local AVHRR Acquisition	Polar SST	GOES SST	Ocean Color	Surface Winds	Altimetry	SAR
Hawai' i	<i>HRPT</i>	X	X	X	X	X	
Northeast		X	X		X		
Caribbean	<i>HRPT</i>	X		X	X	X	
Great Lakes		X	X				X
Gulf of Mexico		X		X			
Alaska	<i>HRPT</i>	X					X
West Coast	<i>HRPT</i>	X	X	X	X	X	





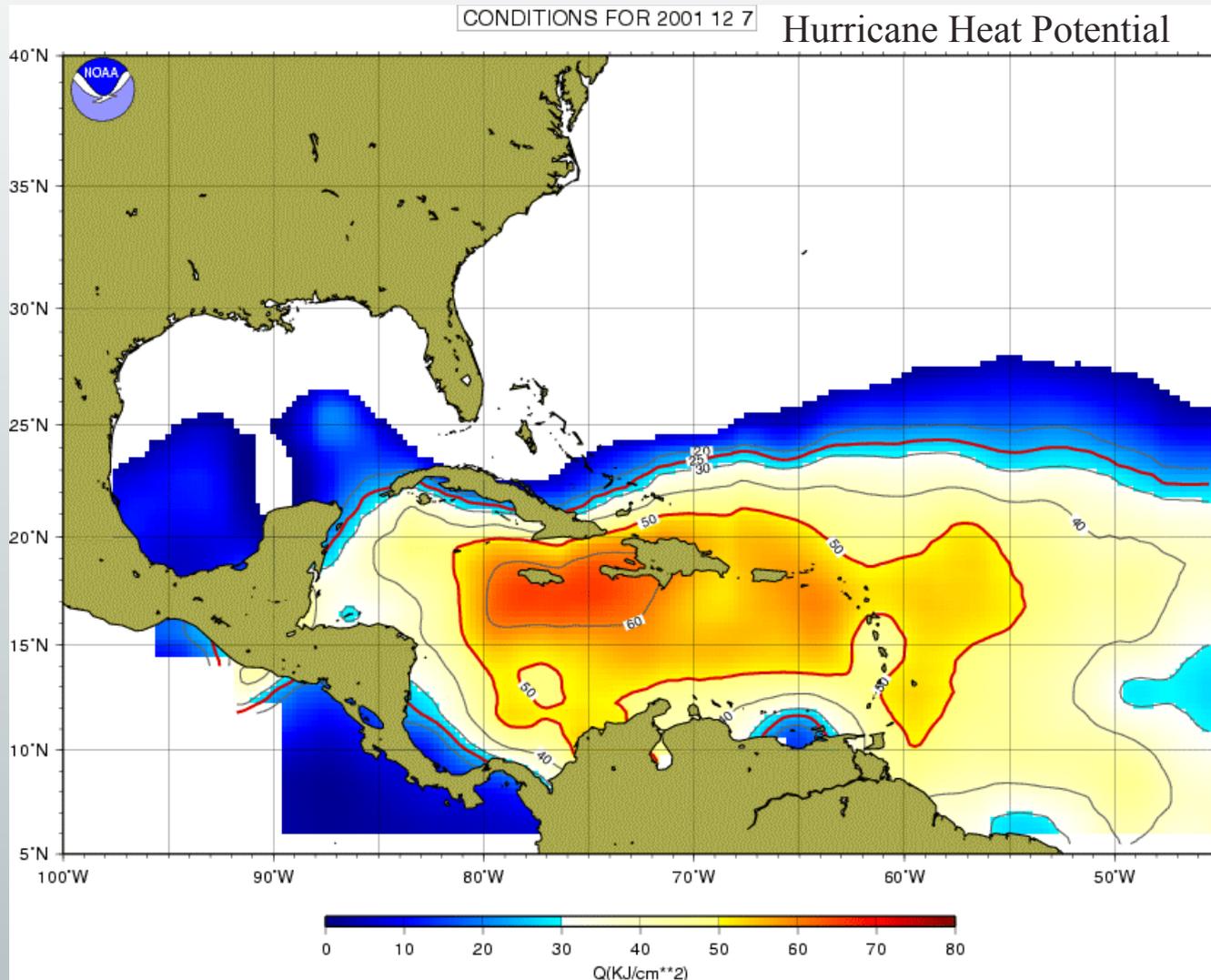
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El Nino Watch



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Caribbean Heat Content Prototype (AOML)



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Gulf of Mexico Harmful Algal Bloom Analysis



Experimental Gulf of Mexico HAB Bulletin 11

20 October 2000

NOAA/NCCOS

CSC

NESDIS CoastWatch and NDBC

Last bulletin: 18 October 2000

ANALYSIS

SW Florida:

After persisting and increasing by 2-3 fold over the past week, the bloom off Sanibel/Ft. Myers decreased substantially between Oct 17 and Oct 19. On Oct 11, maximum chlorophyll was 3-6 ug/l; on Oct 17, 10-20 ug/l; on Oct 19, only 1-2 ug/l. A narrow band of higher chlorophyll, extends from 26d 08'N to 26d 20'N along 82d 01' W. Pockets of chlorophyll of 1-2 ug/l also persist well offshore, along 26N from 82W to 82d20'W. Normal behavior of decreasing chlorophyll offshore was observed.

NW Florida:

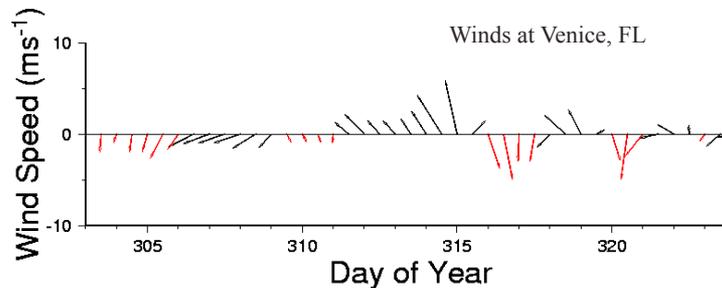
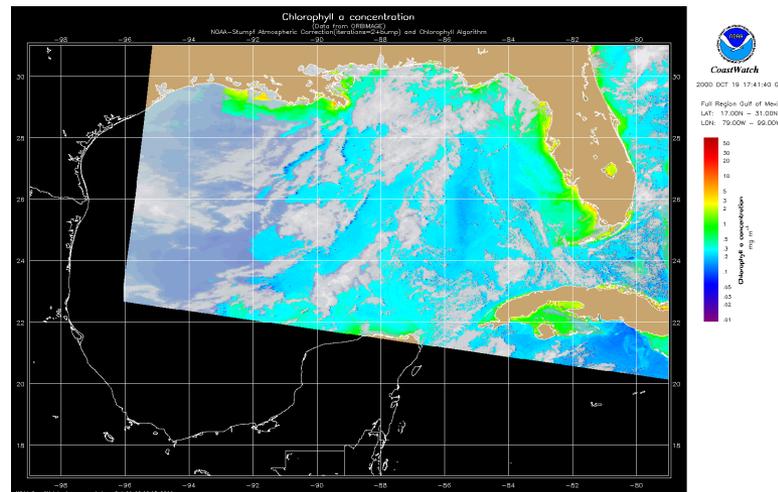
Background chlorophyll (< 0.5 ug/l) from Panama City west and offshore. Clouds just east of Panama City. (As of Oct 17, up to 1 ug/l in that area, where bloom was reported.) Any bloom is tightly constrained to the coast.

Texas:

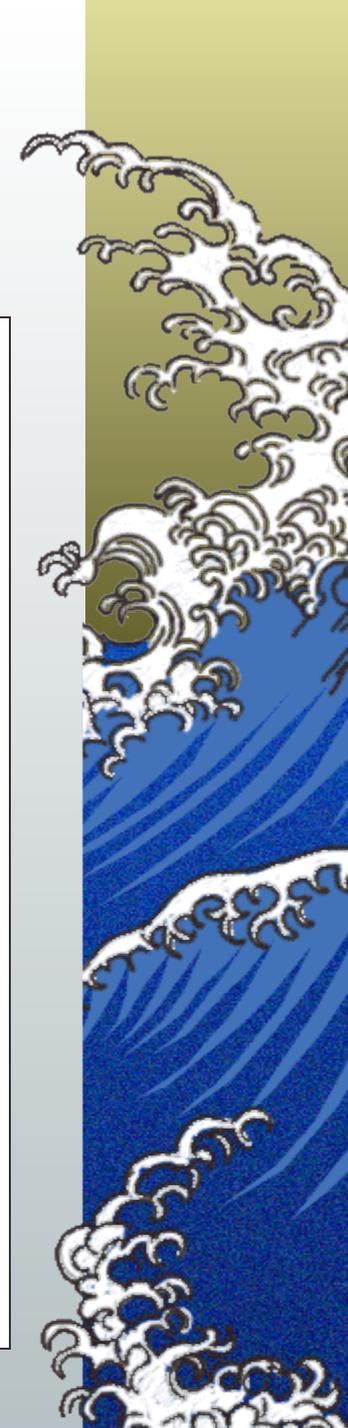
On Oct 18, clouds from 27dN to Galveston. South of 27dN to Brownsville, chlorophyll low at ~1 ug/L (background) along the coast.

Please note the following restrictions on all SeaWiFS imagery derived from CoastWatch:

1. These data are restricted to civil marine applications only; i.e. federal, state, and local government distribution is permitted.
2. Distribution for military, international, or commercial purposes is NOT permitted.



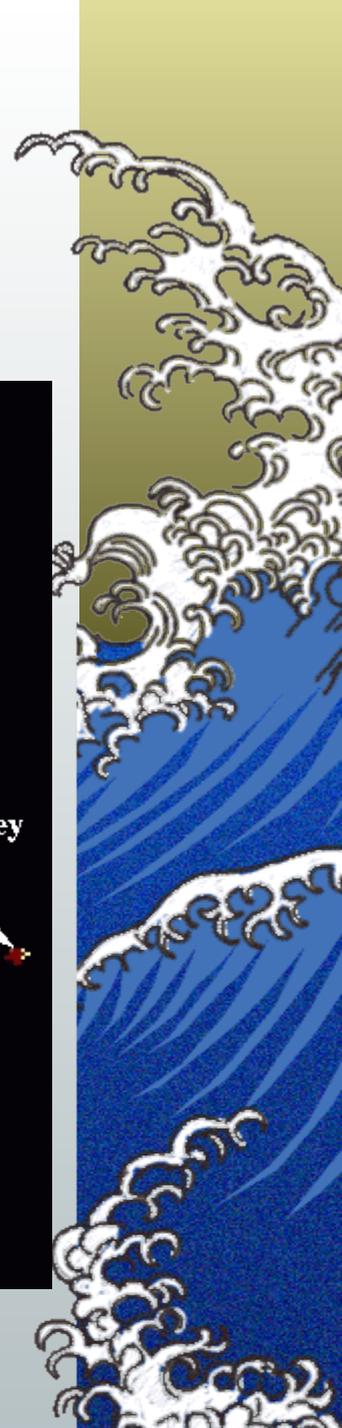
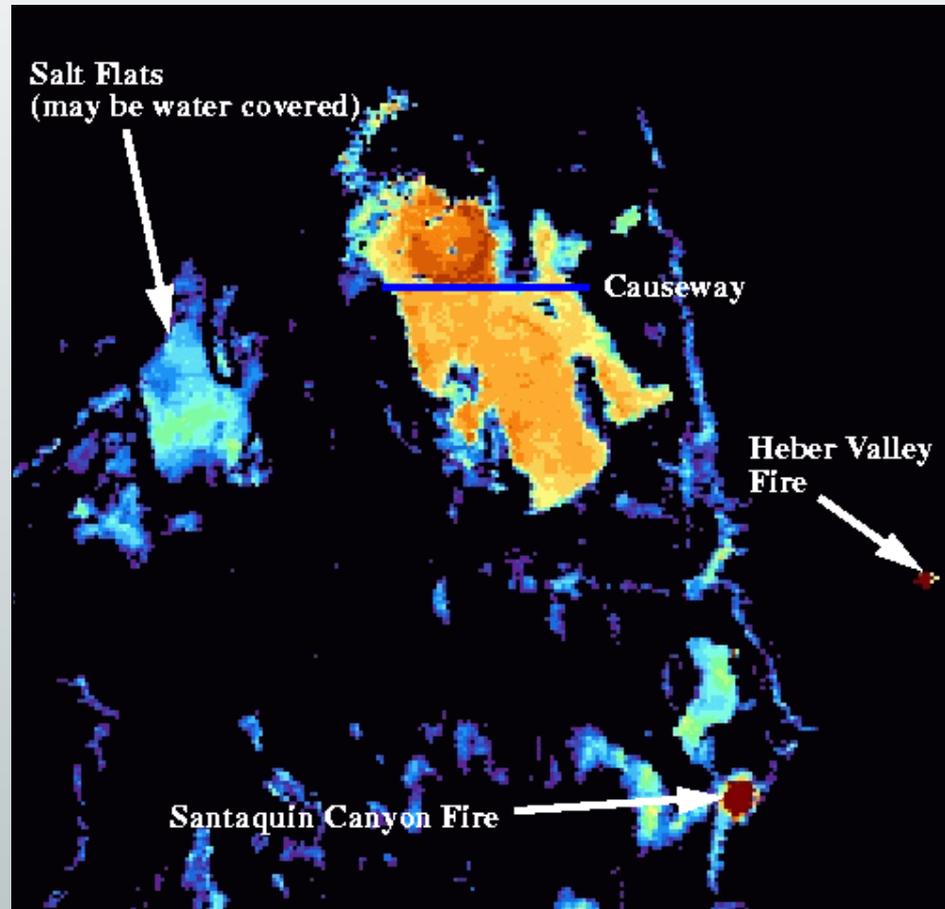
Wind speed and direction are averaged over 12 hours from measurements made on NOAA buoys. Length of line indicates speed; angle indicates direction. Red vectors indicate that wind direction favors upwelling near the coast.



NOAA CoastWatch

Great Salt Lake SST Product

- ▶ GSL ingredient in lake-effect snow in Salt Lake City-hard to initialize in models
- ▶ CoastWatch SST product to be used in mesoscale model for Winter 2002 Olympic Support
- ▶ Produced using new TeraScan system (IPD).



OceanWatch

First steps

- ▲ FY 2003 request (\$680K increase within Sustained Healthy Coasts) for:
 - science support
 - three regional demonstrations, and
 - systems development / expanded operations.
- ▲ Department of Commerce FY 2003 directed – “No increase is provided for the OceanWatch program. The small amount needed for this activity should be provided for out of existing base funds.”



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Next steps

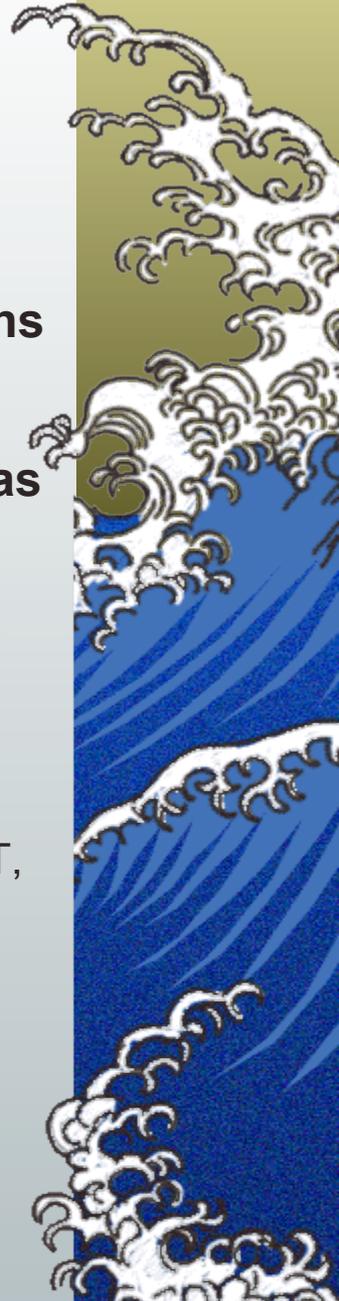
- ✦ **Attempted several small steps forward to define and execute *OceanWatch*:**
 - Restrict to two limited demonstrations (Pacific Grove and Hawai'i)
 - Solicit collaboration with multiple national and international partners (new data sources, techniques development, broadened applications, etc.)
 - Investments in a native NOAA capability for broadened NOAA role in operational ocean remote sensing



OceanWatch

The latest steps

- ▶ **April 2006: NOAA Transition Board directs development of plans for dozens of research to operations projects (FY 2010)**
- ▶ **Ocean Remote Sensing / OceanWatch briefed to upper levels as CEO contribution**
- ▶ **NOAA groups being established and plans being developed for summer submission**
- ▶ **OceanWatch will rely on groups in NOAA to:**
 - Coordinate access to best available ocean remote sensing science (SST, Ocean Color, Surface Winds, and Altimetry)
 - Rely on “other” r2o groups for science development and investment
 - Organize sustainable operational and research facilities supporting above, and
 - Organize and execute sustainable national and international operational ocean remote sensing demonstrations



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