



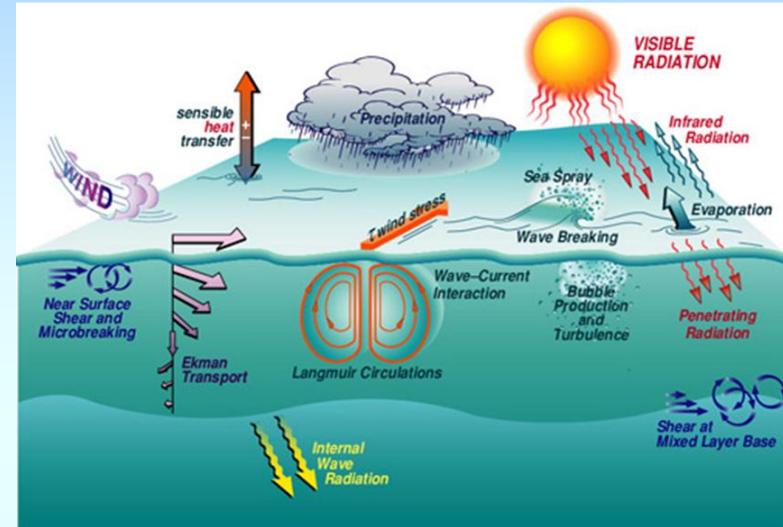
# **Marine Applications with CDRs: Integrated Marine Protected Area Climate Tools (IMPACT)**

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# IMPACT

## Integrated Marine Protected Area Climate Tools

- Provide climate information for marine resource managers
  - Highest quality, most relevant climate data for ecosystem studies
- Reduce data complexity and size applying a user-focused data access model
- Allow integration of climate data with ecological data
- Scalable, needs-based focus
  - Include user perspective and voice throughout



*Impacts from climate are driven by far more than temperature or precipitation anomalies, and usually at scales/resolutions far smaller/finer than what is contained in most climate data sets. Complex interactions require the ability to access climate elements and behaviors not traditionally explored in climate impact assessments.*

# Serving Up Data

**Data Center Model Of Data Access**



*Current method of data access and delivery*

**User Model Of Data Access**



*Preferred method of same*

Going from “drinking from the fire hose” to “sipping a nice cup of tea”

*Reduce the data volume, filter what remains, and mix with relevant ecological data to produce a desired product.*

# IMPACT User Community

Marine resource managers needing to know how climate changes effect their ecosystems:

- 1700 Marine Protected Areas\*
- 14 NOAA Marine Sanctuaries\*
- 5 Sentinel Sites\*



\* *Gulf of the Farallones National Marine Sanctuary (GFNMS)* for rapid prototyping

- Pacific Coast Federation of Fisherman's Associations
- Ocean Climate Center
- Visitor and Education Center

# Example Data Provided with IMPACT

Variable	Resolutions
Sea Surface Temperature (SST) <i>Pathfinder SST – Bob Evans</i>	Daily, 4 km
Ocean Color (chlorophyll) <i>SeaWiFS 9/1997 – 12/2004</i> <i>MODIS Aqua 2002 - 2011</i>	Daily, 9 km Daily, 4 km & 9 km
Cloud Cover <i>ISCCP Pixel Level Cloud Product (Dx)</i>	3 hourly, 4 km pixel, every 32 km
Top of Cloud Temps <i>GridSat – Ken Knapp</i>	3 hourly, 0.07 x0.07 deg

Needed for this application: Daily, 32km or finer  
Your CDR?

# IMPACT User Interface

NOAA Weather and Climate Toolkit

File Data View Tools Help

Map View: Standard

Services  
Data  
Layers

Integrated Marine Protected Area Climate Tools (IMPACT)

**CDR Selection**

Marine Protected Area: Gulf of the Farallones Marine Sanctuary

Variable: Top of Cloud Temps 1.2 gigabytes

Time Period: Full Period

**Time: Full Period**

Start: 07/26/1990 End: 07/26/2000

List Results

**List Selection**

**Statistical Parameters**

- Brightness Temperature (~11um)
- irwin - Departure from yearly normal
- irwin - Departure from POR normal
- irwin - Monthly Avg
- irwin - Monthly avg departure from POR normal
- irwin - Departure from monthly normal
- irwin - Monthly Max

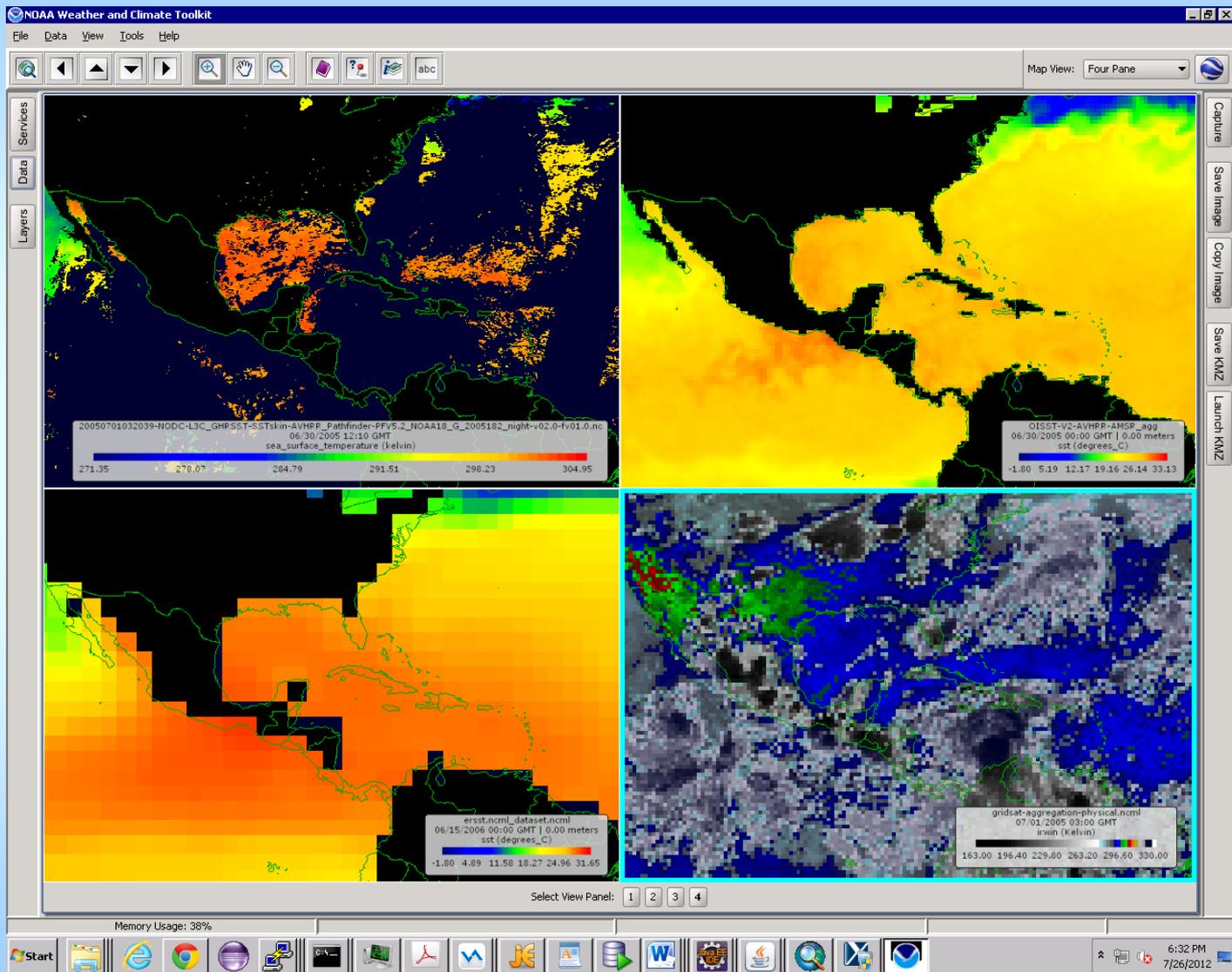
**Available Dates**

- 1990/07/26 00:00 GMT
- 1990/07/26 03:00 GMT
- 1990/07/26 06:00 GMT
- 1990/07/26 09:00 GMT
- 1990/07/26 12:00 GMT
- 1990/07/26 15:00 GMT
- 1990/07/26 18:00 GMT
- 1990/07/26 21:00 GMT

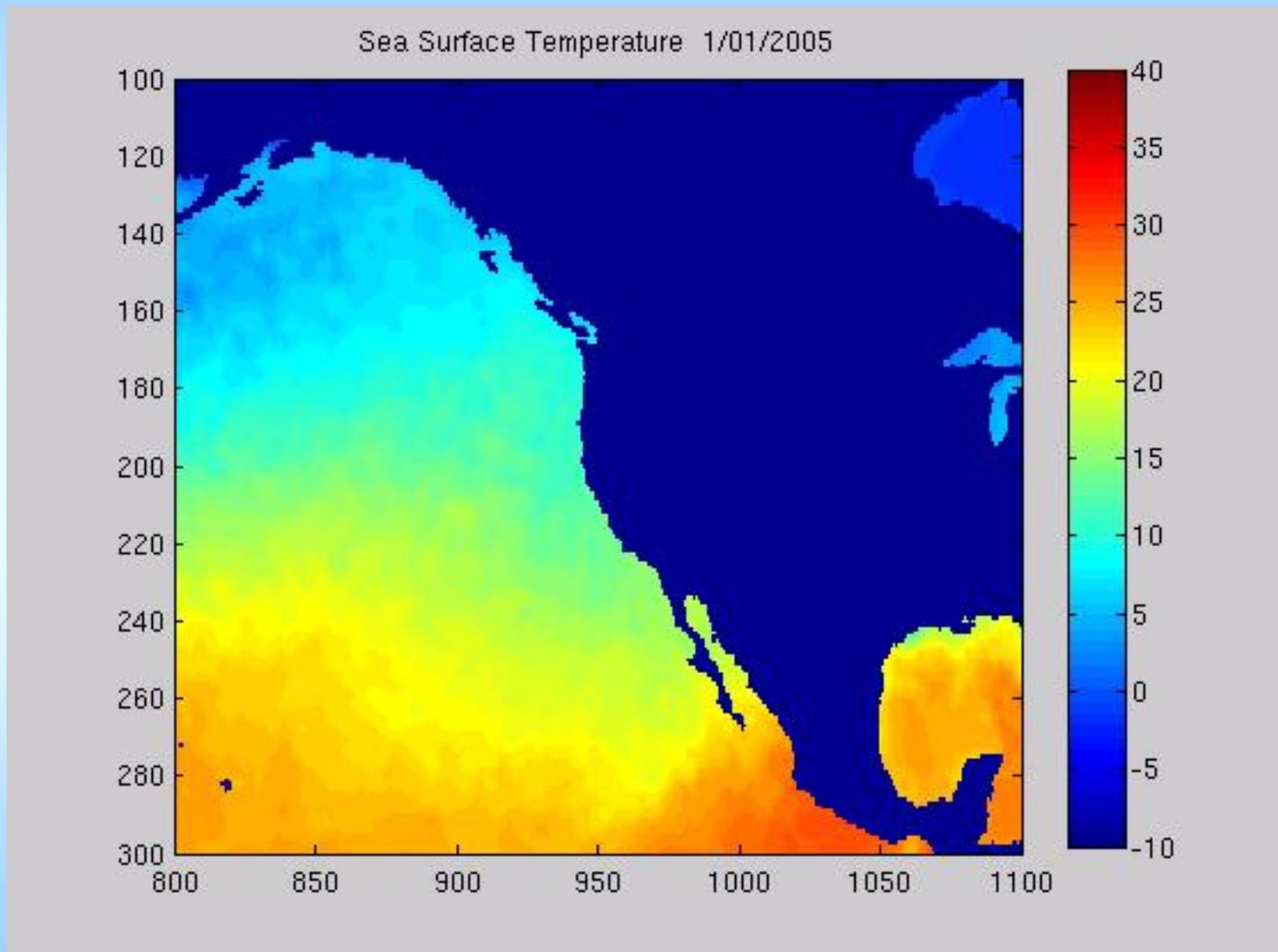
View  
Animate  
Analysis 1

Memory Usage: 51% 122.9799°W 37.7254°N (No Data)

# Visualization Capabilities



# Stepping Through Time



# THANK YOU

