

# SCCOOS

*Southern California Coastal Ocean Observing System*

&

# HPWREN

*High-Performance Wireless Research and Education Network*



## *Personnel*

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[www.sccoos.org](http://www.sccoos.org)

CALPOLY-SLO

UCSB

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SCCWRP

UCI

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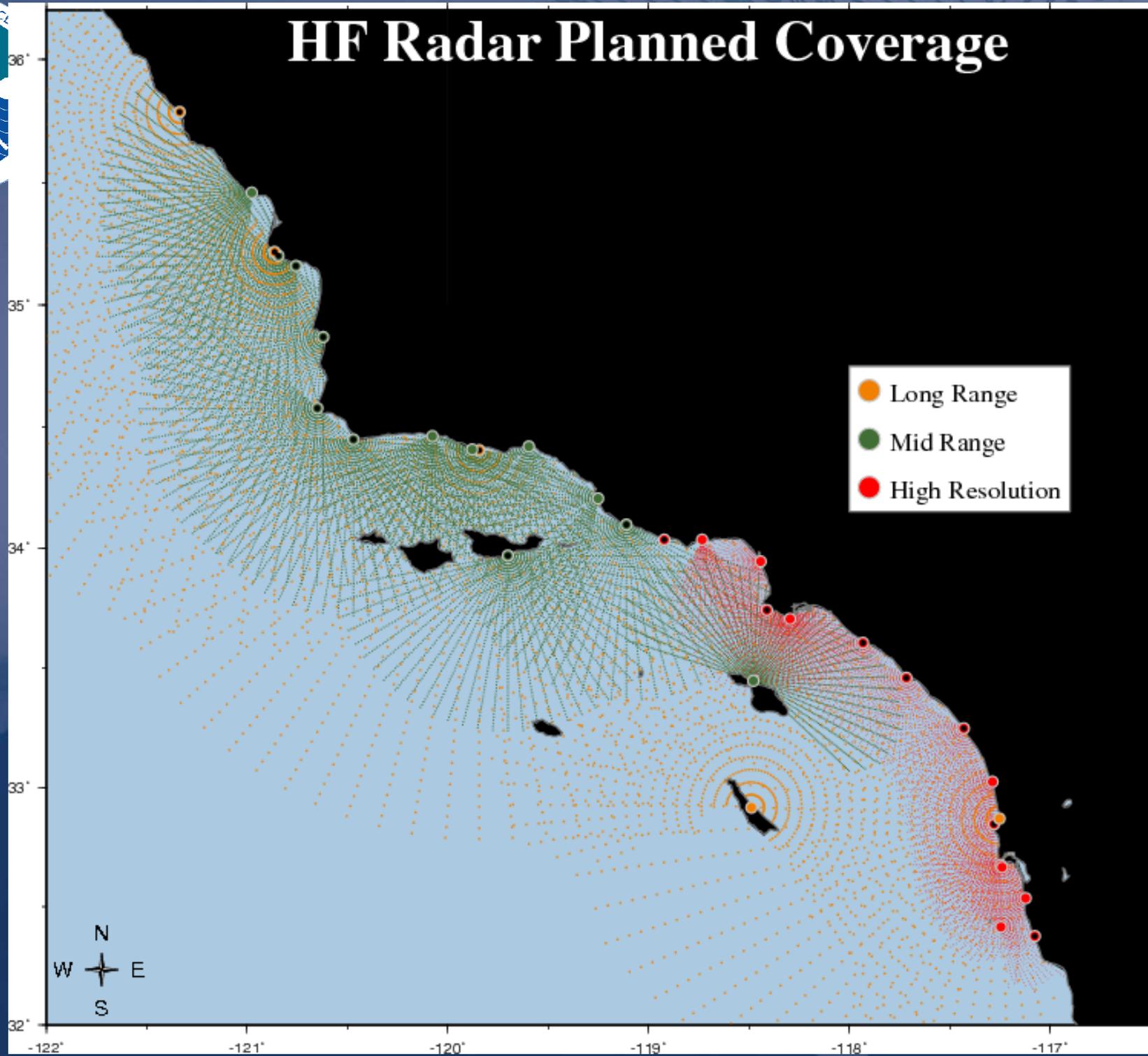


# Coastal Observing Applications

- Assessment of Ecosystem Trends
- Long Term Trends: Climate Change
- Military Applications
- Oil Spill Response
- Regional Ocean Modeling
- Search and Rescue
- Storm Water Discharges and Outfall Tracking
- Vessel Traffic Aids
- Water Quality
- Wind and Wave Conditions



# HF Radar Planned Coverage

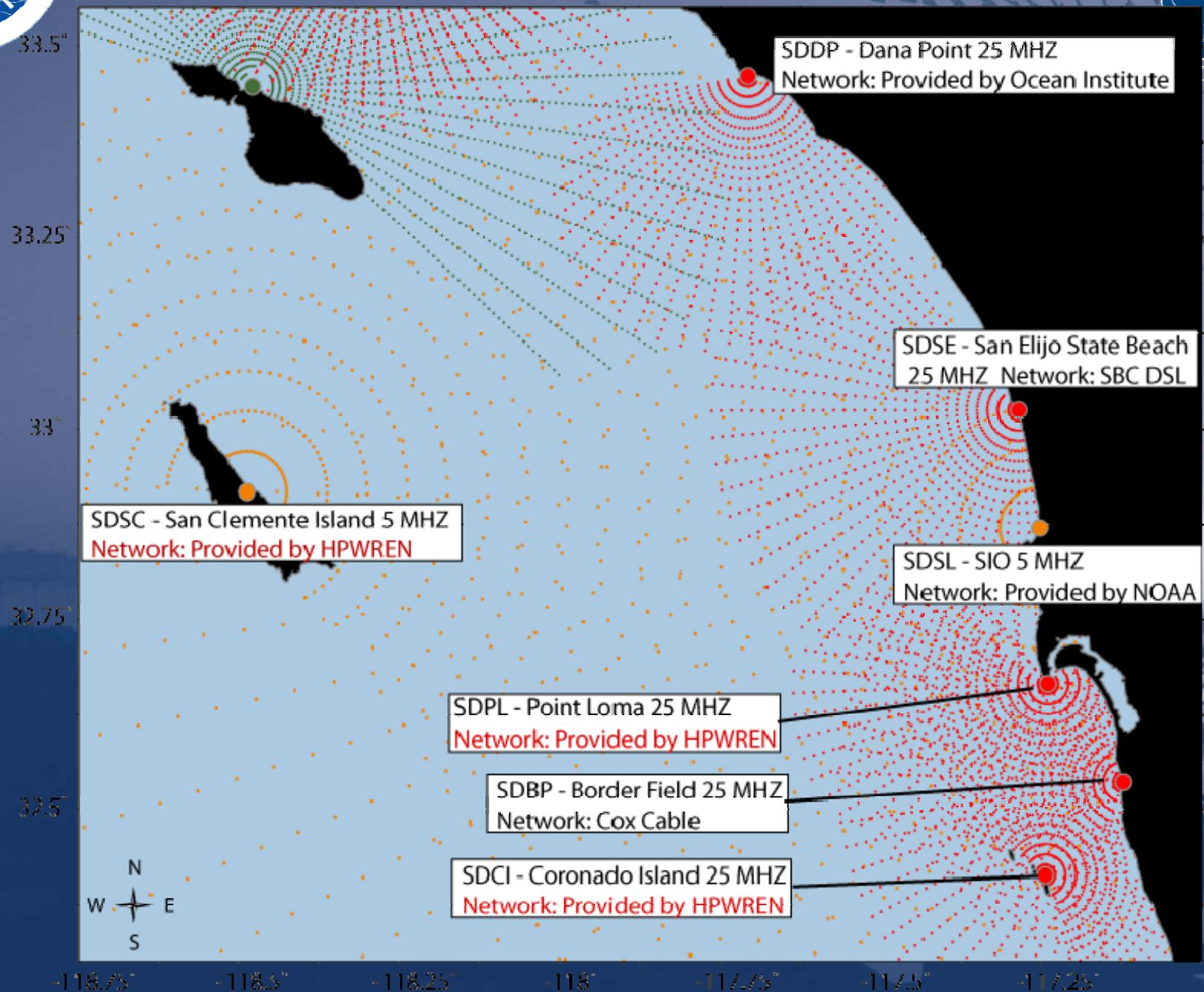


- Long Range
- Mid Range
- High Resolution





# HF Radar Sites



33.5°

33.25°

33°

32.75°

32.5°



SDSC - San Clemente Island 5 MHz  
Network: Provided by HPWREN

SDDP - Dana Point 25 MHz  
Network: Provided by Ocean Institute

SDSE - San Elijo State Beach  
25 MHz Network: SBC DSL

SDSL - SIO 5 MHz  
Network: Provided by NOAA

SDPL - Point Loma 25 MHz  
Network: Provided by HPWREN

SDBP - Border Field 25 MHz  
Network: Cox Cable

SDCI - Coronado Island 25 MHz  
Network: Provided by HPWREN

-118.75° -118.5° -118.25° -118° -117.75° -117.5° -117.25°



# HF Radar Equipment





# CORONADO ISLAND Surface Current Mapping System



*Meteorological Station*



*Solar and wind powered system*



*Wireless communications*

*Wind generator*



# Surface Current Mapping



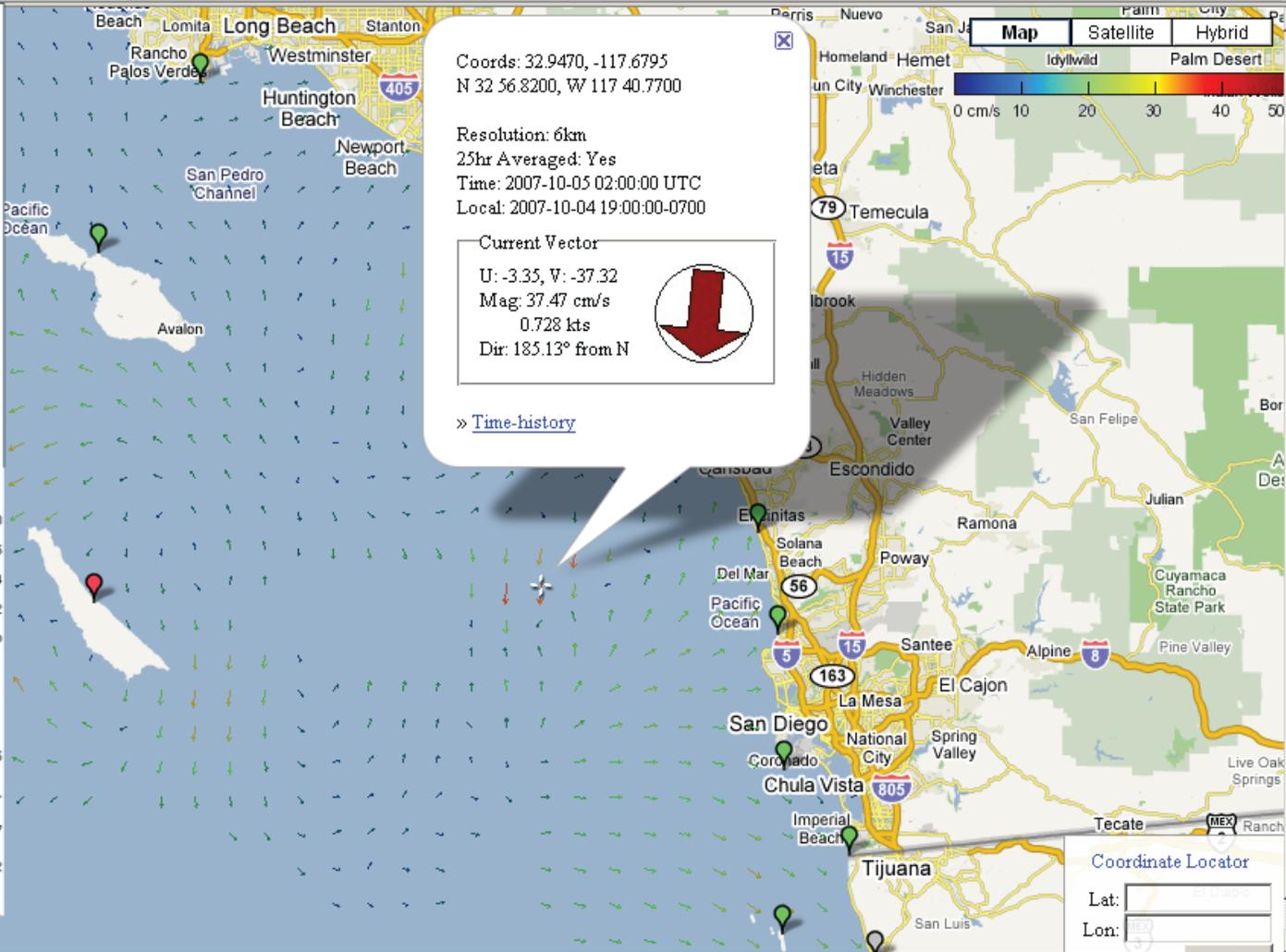
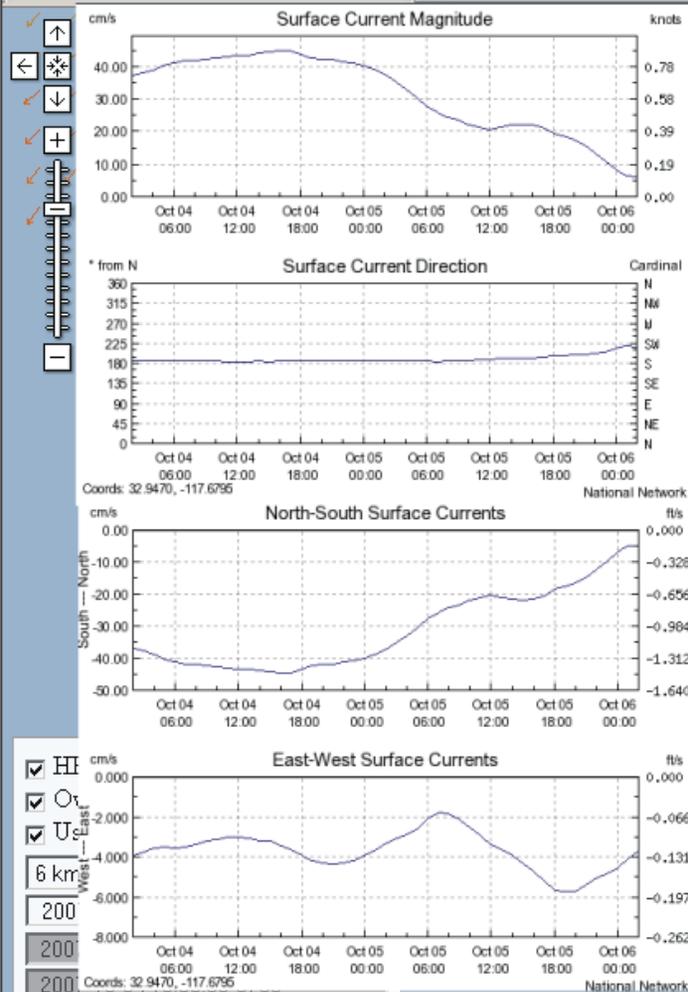
SCCOOS Data Products » RTV -- Fullscreen - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.sccoos.org/data/hfrnet/fullpage.php?l=33.431441,-119.399414&zz=7&type=0&sta=8&info=0&avgs=1&currents=1&marks=0&r

macbook printscreen

SCCOOS Data Products » RTV -- F... Surface Currents » Time series plots





# Hyperion Outfall Impacts Santa Monica Bay



### 5-Mile Outfall Field Inspection

1. Multi-Beam Precision Scanning Sonar (entire length including diffusers, except in the shallow nearshore area)
2. ROV Inspection at Key Points (along entire length of outfall)
3. Internal Dive Inspection of First 2,000ft. of Outfall (entry from shore structure)
4. Pipe Coring at Indicated Locations
5. Internal Sonar Scanning of Part of Diffusers
6. Piezometric Testing at Indicated Locations
7. Geophysical Seismic Reflection Survey (Phase II, if needed along entire length of outfall, except nearshore area)

### 1-Mile Outfall Field Inspection

1. Multi-Beam Precision Scanning Sonar (entire length excluding diffusers, except in the shallow nearshore area)
2. Dive Inspecting 1,500ft. Enclave Section
3. Dive Inspection of Undercut Section
4. Internal ROV Inspection 2,000ft. Offshore (entry from existing 18"x72" diffusers)
5. Internal ROV Inspection 2,000ft. Onshore (entry at shore structure)
6. Pipe Coring as Indicated to be Determined after ROV Inspection
7. Geophysical Seismic Reflection Survey (Phase II, if needed along entire length of outfall, except nearshore area)

- Legend**
- 10 Pipe Coring
  - 8 Piezometric Testing Locations

Recent Meteorological Stations and Observations  
 UTC Time: 2007-10-01 22:52:45  
 Local Time: 2007-10-01 15:52:45

Recent Meteorological Stations Reporting

Click map to reset.

Southern California Regions

- Metro Bay
- Santa Barbara Channel
- Ventura County
- Los Angeles
- South Channel Islands
- Orange County
- North San Diego
- San Diego / Mexico

Available Products

- Automated Shore Stations
- Manual Shore Stations
- Bathytherm
- Moorings
- Meteorological Observations
- Oceanic
- Metro Bay
- Santa Barbara Channel
- Ventura County
- Los Angeles
- South Channel Islands
- Orange County
- North San Diego
- San Diego

Winds & Rainfall Forecasts

- Satellite Imagery
- Shoreline Water Quality
- Surface Current (Larson)
- Wave Conditions (COPI)
- Cast Data (Ships & Gliders)
- Chlorophyll and HABs
- Plume Tracking

Grab Raw Data

Now Showing: Channel: Wind Speed & Dir Units: knots

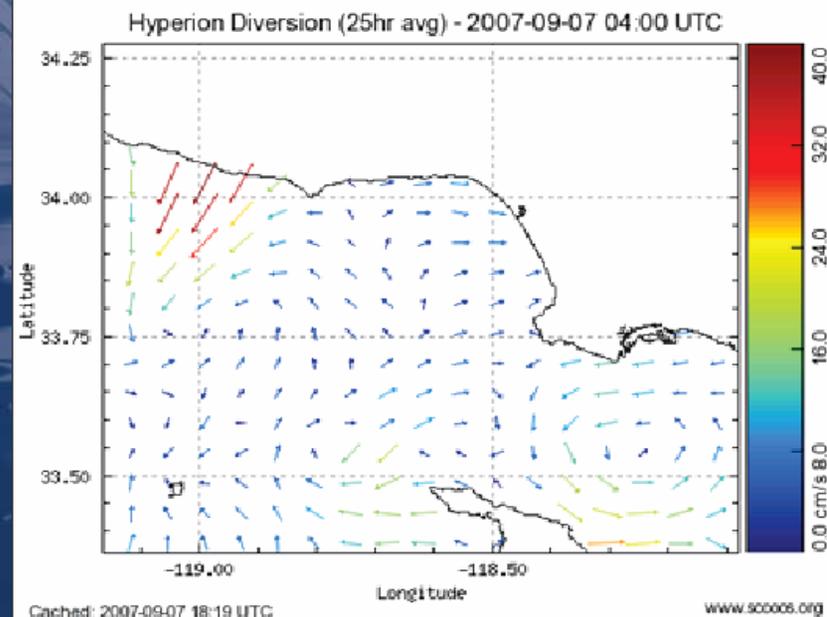
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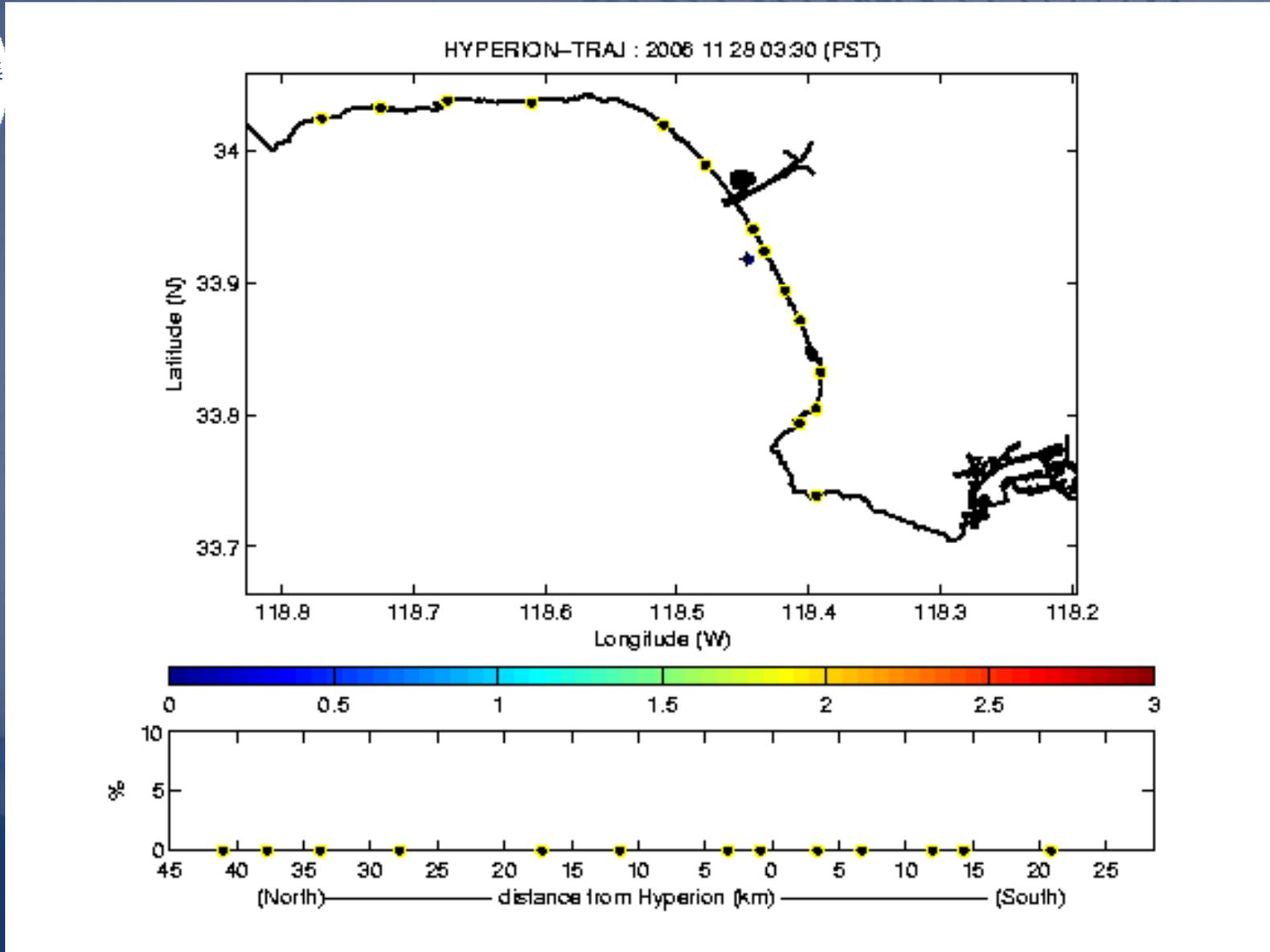
Providers:	Regions:	Distance:
MARITIME	Morro Bay	5 km
SCCOOS	Santa Barbara Channel	
OCSD	Ventura County	
MesoWest	South Channel Islands	
RAWS	Los Angeles County	
APRSWANET	Orange County	
OTHER MTR	North San Diego	
WMOYou	San Diego	
NOS-PORTS	All Regions	

View Full Page

For access to raw data, visit the [MADIS query page](#).

November 28-30, 2006 Inspection





**Realtime trajectory tool implemented at surfacing outfall.  
Provides indication of beach impact.**



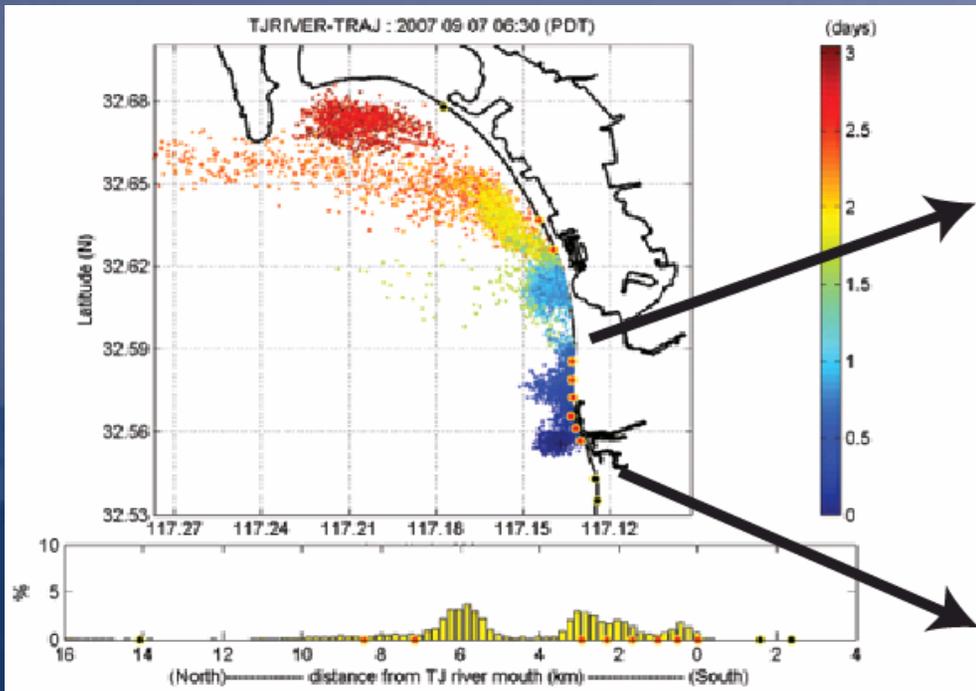
# Network Usage



- Each radar site produces  $\sim 100$  GB/year
- Only processed data is sent to SIO servers
- Radial currents transmitted hourly  $\sim 3$  GB/yr
- Occasional maintenance with remote login
- Low bandwidth operation



# Tijuana River Plume Tracking



Date: 2007-09-07 13:30 GMT (2007-09-07 06:30 PDT)

Station ID	Station Name	Particle Count	Plume Potential
1	Coronado (North Island)	0	NO
2	Silver Strand	12	YES
3	Silver Strand Beach	42	YES
4	Carnation Ave.	206	YES
5	Imperial Beach Pier	123	YES
6	Cortez Ave.	101	YES
7	End of Seacoast Dr.	33	YES
8	3/4 mi. N. of TJ River Mouth	136	YES
9	Tijuana River Mouth	50	YES
10	Monument Rd.	0	NO
11	Board Fence	0	NO

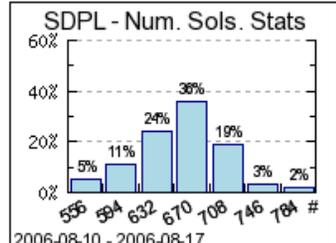
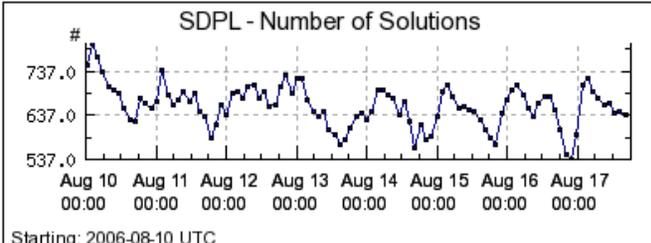
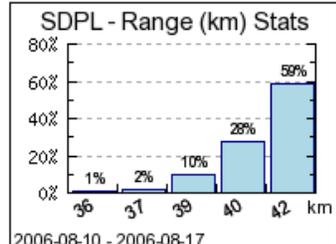
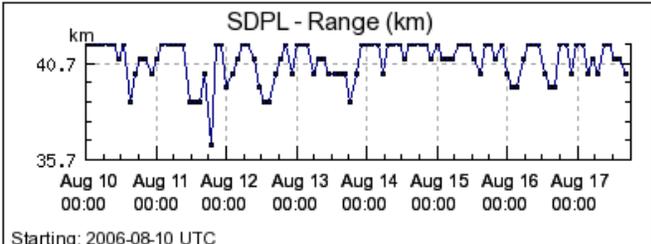
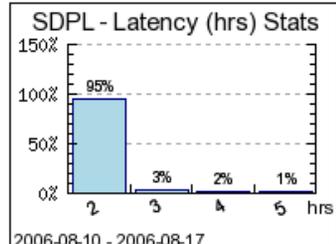
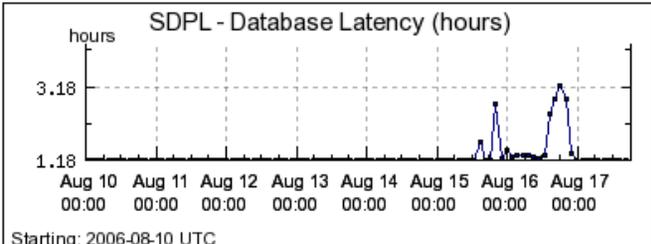
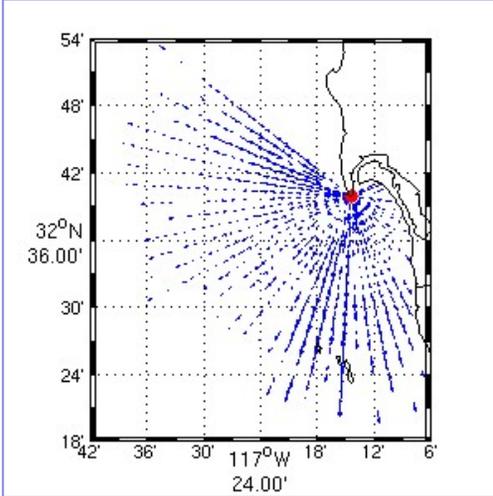


# National Network Realtime Data page



San Diego, Point Loma (SDPL)  
 Network: SIO  
 Latitude: 32.6658  
 Longitude: -117.2396  
 Arrival Time: 2006-08-17 17:11:03  
 Center Frequency: 25.27 MHz  
 Beam pattern: Measured  
 Most Recent File:  
 Rad\_m\_SDPL\_06-08-17\_1600.hfrss10lluv  
 File Format: hfrss10lluv  
 /Volumes/DataDrive: Used: 18.2 GB, Free: 23.0 GB  
 /: Used: 5.8 GB, Free: 8.5 GB  
 Receiver Temp.: 43 C  
 AWG 3-Module Temp.: 50 C  
 Tx Drive: Pulse  
 Tx Forward Power: 32.3 W  
 Tx Forward Reflected: 3.4 W  
[More Plots](#)  
 Age: 2:16 (H:MM)  
 Page Generated: 2006-08-17 18:16:44 GMT

UTC Time: 2006-08-17 18:17:00  
 Local Time: 2006-08-17 18:17:00



Time Range: 2006-08-10 - 2006-08-17 UTC

# Hours	# Records	# Missing	% Available
187	185	2	98.9%

Parameter	Min	Max	Median	Avg	StdDev
Latency	1.18	4.33	1.19	1.29	0.42
Range	35.70	41.70	41.70	40.86	1.18
# Sols.	537.00	799.00	663.00	658.88	47.31

FROM: 2006 08 10  
 TO: 2006 08 17  
 Generate Plots



***Thank You!***

