



NOAA NWS (NDBC) INVOLVEMENT IN PaCOOS

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PaCOOS Board of Governors Meeting
16 and 17 May 2007

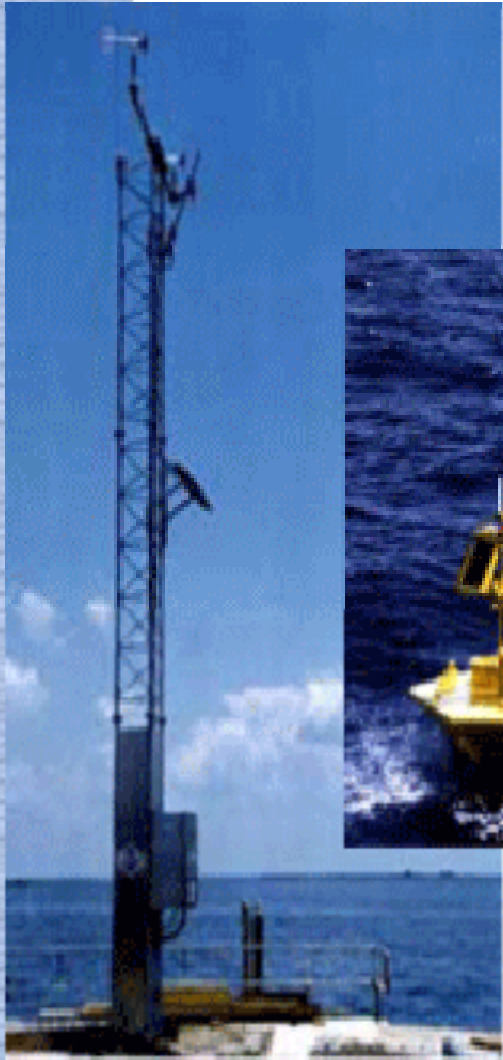


National Data Buoy Center

- **One Hundred (100) meteorological buoys moored off East, West, Gulf, Alaska, and Hawaiian coasts and in the Great Lakes. Funding for 9 more and to add ocean sensors on select buoys.**
- **Fifty-five (55) oceanographic buoys located in the tropical Pacific [TAO].**
- **Fifty-six (56) meteorological stations located on East, West, Gulf and Alaskan coasts, Lake St. Clair and St. Lawrence Seaway.**
- **Twenty-five (28) Deep-ocean Assessment and Reporting of Tsunami (DART) stations in Pacific and Atlantic Oceans, Caribbean Sea, and Gulf of Mexico. Funding for 11 more.**
- **Four hundred plus (400+) vessels routinely reporting meteorological observations worldwide.**
- **Collect, QC and distribute data from ~300 partner stations.**



Observing System Platform Types



C-MAN station



6-meter
NOMAD



C-MAN station



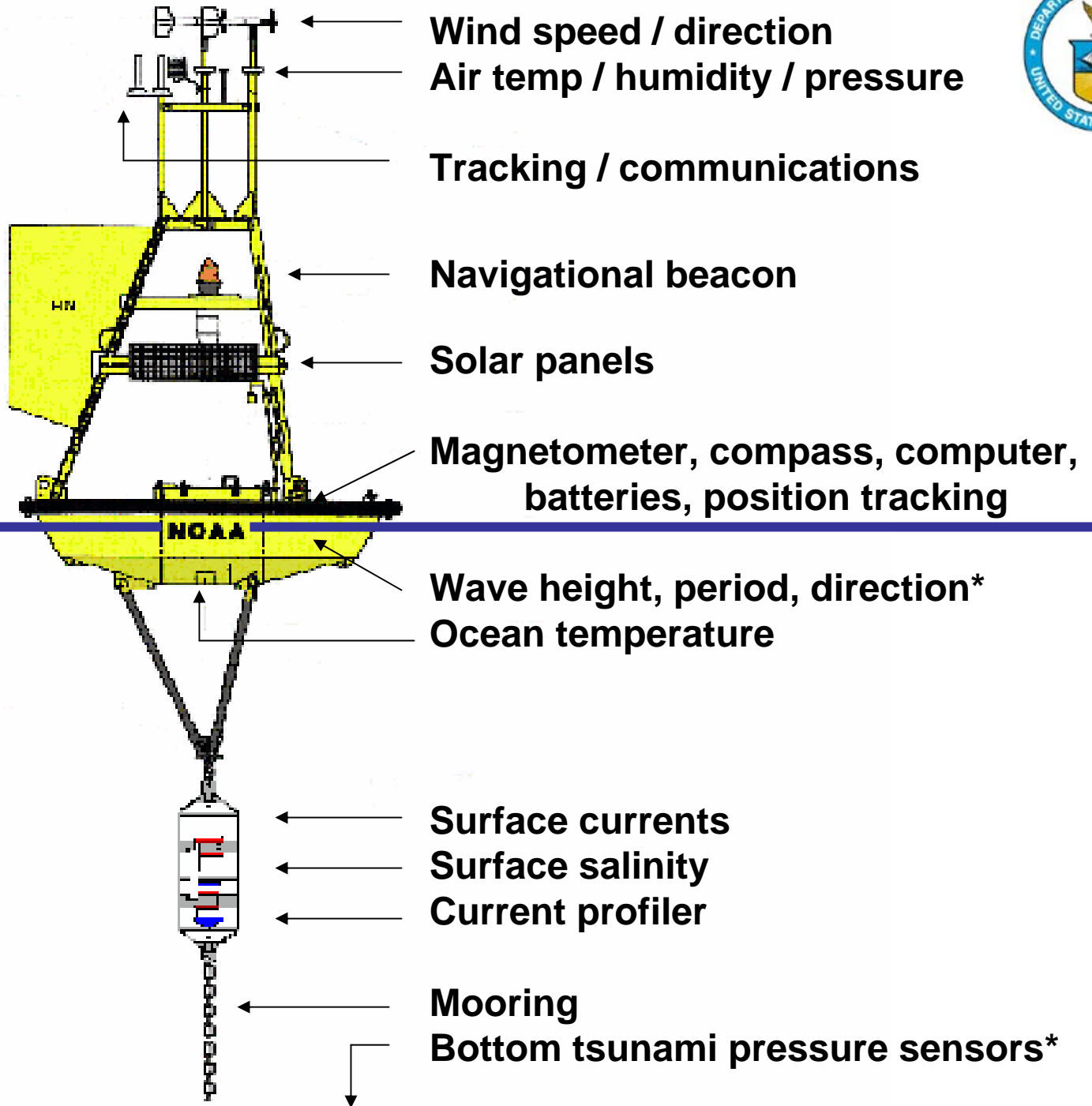
3-meter
discus



DART II



TAO



Air
Water

* Not on all buoys



IOOS Required Parameters



Lower Atmosphere	Ocean Surface	Ocean Sub-surface
Temperature	Temperature	Temperature
Pressure	Salinity	Salinity
Wind	Currents	Currents
Precipitation	Wave Height / Period	Dissolved Oxygen
Humidity	Wave Direction	Carbon Dioxide
Radiation	Sea Height / Level	Chlorophyll
Fluxes	Fluxes	Nutrients
Visibility	Radiation	Radiation
“Air quality”	Ocean color	Marine monitoring
	Sea Ice	Bathymetry
	Toxins / pollutants	Toxins / pollutants
		Acoustic Signals



NDBC IOOS

Data Assembly Center

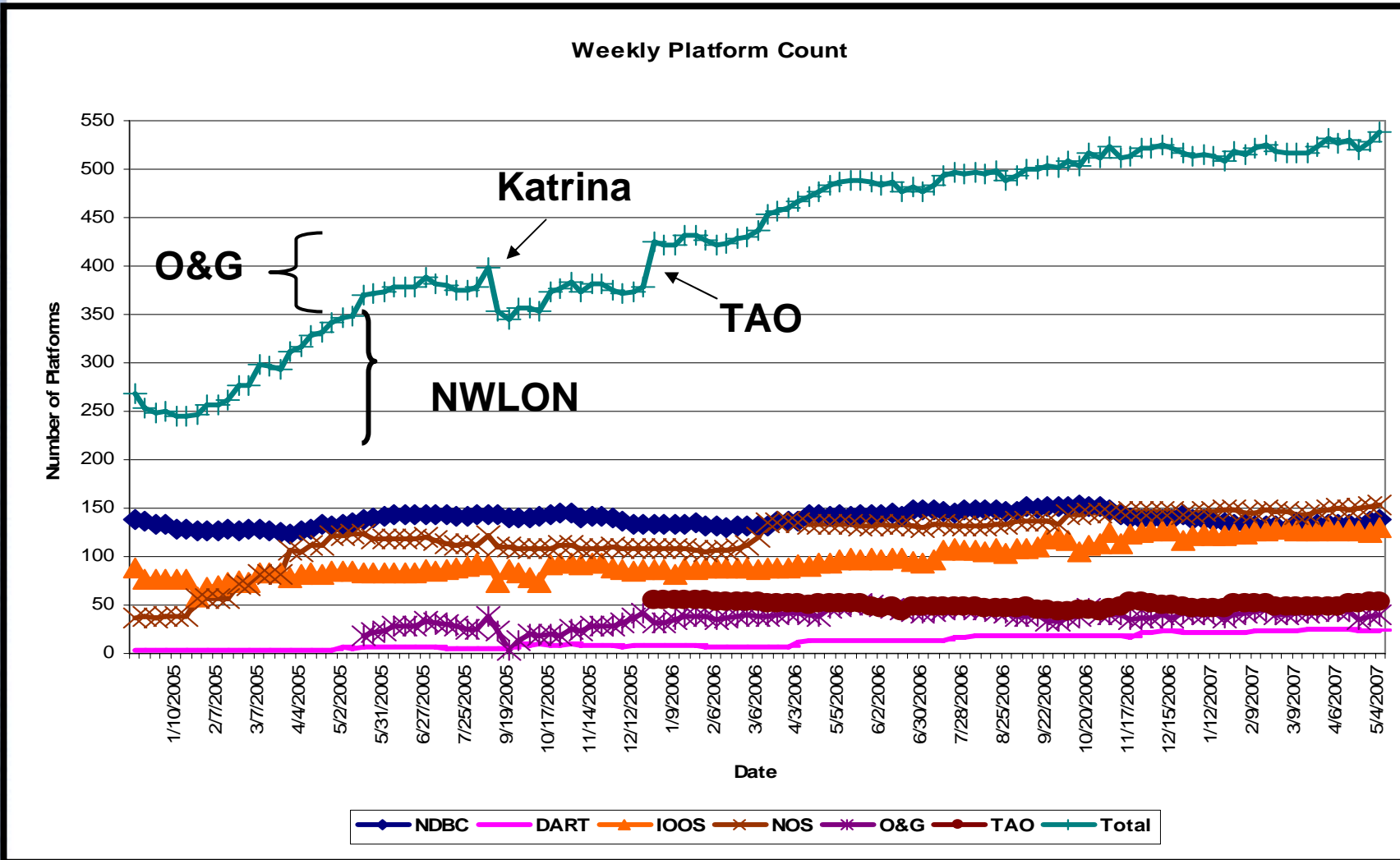


- 24/7/365 support of
 - Data Quality Control
 - Communications
 - Operations
- Daily Operations Brief
- More than 500 stations currently supported
 - NDBC Buoys
 - NDBC C-MAN Stations
 - NOS Stations
 - DART
 - TAO
 - VOS
 - Partner Stations
 - OOSs
 - MMS ADCP



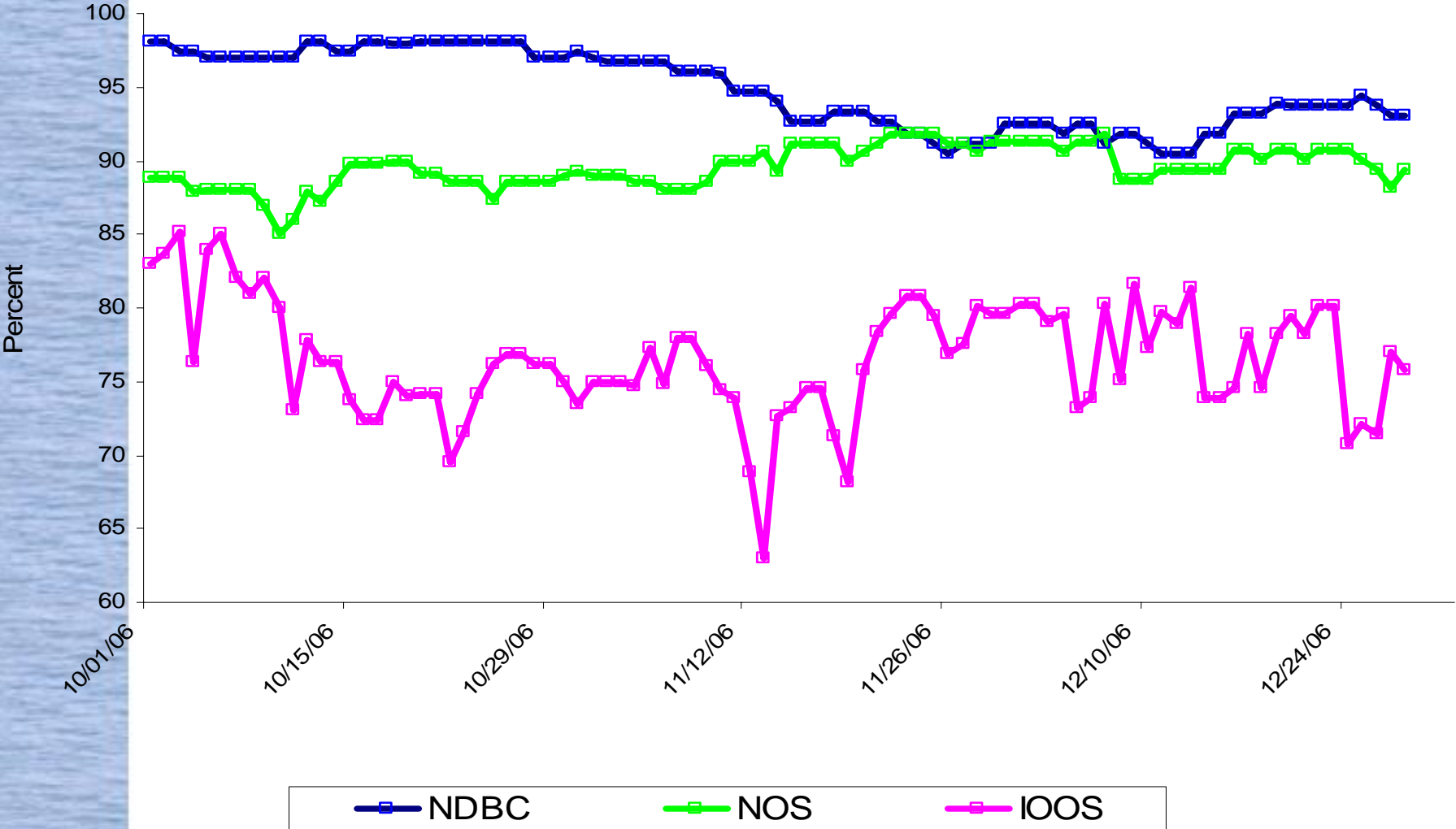


Growth of Platforms Processed





Network Availability Variance





NDBC

PaCOOS Regional Assets

- **28** moored buoys which collect meteorological and oceanographic information and transmit these data in real time.
- **8** Coastal-Marine Automated Network (C-MAN) coastal meteorological and oceanographic stations. These stations are found in a variety of configurations including locations on piers, offshore lighthouses, and beach towers.
- **5** Deep Assessment and Reporting of Tsunami (DART) buoys.
- NDBC also is responsible for the Volunteer Observing Ship (VOS) program. We coordinate the volunteer observations from commercial vessels which visit ports in your region with NWS Port Meteorological Officers (PMOs) located in Los Angeles/Long Beach, CA, San Francisco/Oakland, CA and Seattle WA. Some **227** ships are involved in this effort within your region, providing literally thousands of observations yearly.



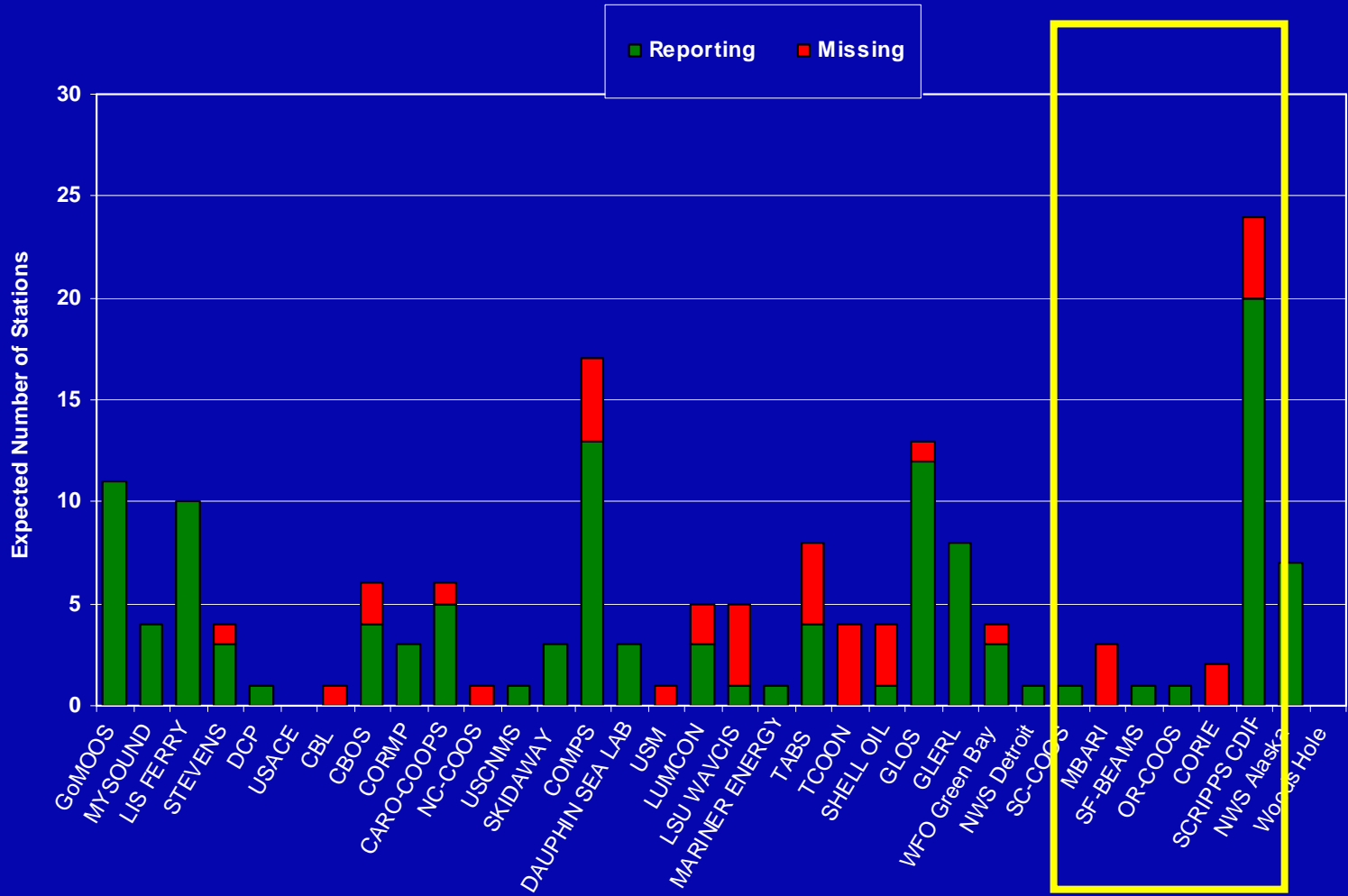
IOOS

PaCOOS Region Assets

- **NDBC operates the IOOS Real-time Data Assembly Center** where we provide 24/7 automated and human quality control and worldwide data distribution for both our own data and those of primarily academic partners associated with the IOOS Regional Associations (RAs). We also provide these services for meteorological data from the National Ocean Service (NOS) National Water Level Network (NWLON) stations and for IOOS partners in the oil and gas industry. We also host the NOAA HF Radar National Server. These services provide the following observations in your region:
- **34** IOOS partner buoys and stations
- **25** NOS meteorological stations associated with National Water Level Observation Network
- **39** IOOS partner HF Radar sites providing ocean surface current data
- **8** Canadian Buoys (Data display and forwarding services only)



IOOS Partners Status





Collaborations of Note

- **Liaison** with California Department of Fish and Game regarding use of ship **for buoy services**.
- Two former **MMS buoys** formerly sponsored by the Minerals Management Service have been **kept operational with NOAA IOOS** funds working with the Channel Islands National Marine Sanctuary.
- NDBC is working closely with the Scripps Institution of Oceanography (La Jolla, CA) on several projects including the **National HF Radar Server and Architecture Project** which provides maps of surface currents throughout the Western Region coastline, and on wave buoy technology, evaluation and data sharing.
- **Hosting instruments on buoy for Oregon State University**, with an agreement for maintenance cooperation serving as a future IOOS prototype
- **Coastal pCO₂** measurements with OAR/PMEL
- NDBC is in dialog with the Pacific Ocean Shelf Tracking Project (**POST**, A Permanent Continental-Scale Acoustic Tracking Array for Fisheries Research & Ocean Observation) examining the possibility of **using NDBC buoys for fish population tracking**.



Partner Platform Status

Wednesday, 2/28/2007

Central Daily Evaluation

WED MWS Met Status

Obj Freq

Winds Waves

BA AT DP WD WS GT WW PD WT TD VS CR OC

Summary of Current Issues/Actions

Issue/Action Reason for Change

Effective Date

Verified on their Web Site

Exp	Station	Pgm	WED	MWS Met Status	Obj Freq	BA	AT	DP	WD	WS	GT	WW	PD	WT	TD	VS	CR	OC	New Items	Issue/Action	Reason for Change	Effective Date	Verified on their Web Site
Y	SPAL1	LUM	--						D	D	D				D	D				Not Activated - BURL1 WSPD/GUSTS: WSPDs 2m/s low WTMP/WINDS failed WTMP = -22 Tide data failed No data reports		11/21/06 11/12/06 12/08/06	-- IS RB1
Y	LKPL1	LUM		Release																			
Y	TRBL1	LUM		NR																			
Y	LUML1	LUM		Release																			
Y	TAML1	LUM		Release											D	D				WTMP data failed TIDE data failed	WTMP = -data Tide = -9.8	11/12/06 11/12/06	N IS
Y	SIPM6	LSU		NR	2hr																		
Y	SPLL1	LSU		Release				D						**	D					WTMP data failed DEWPT data failed	erratic DEWPT = ATMP	01/24/07 11/26/05	Y RB2 RB1
Y	ILD1	LSU	i	Release	2hr			m						**		D				Data intermittent TIDE data failed		02/26/07 4/5/2006	IS Y IS RB1
Y	SLPL1	LSU		NR	2hr											D							
Y	MRS1	LSU	i	Release				D						**						Data intermittent DEWPT failed	DEWPT = ATMP	02/22/07 11/09/04	Y TJB RB1
Y	42067	USM		NR																			
Y	FGBL1	FOR		NR											m					No data reports		10/21/06	Y TJB
Y	PCNT2	TCO		NR																			
Y	RTOT2	TCO		NR																			
Y	BABT2	TCO		NR																			
Y	RSJT2	TCO		NR																			
Y	42047	TAB	X	NR	30m	D	D	D	D	D	D				D					All data bad			
Y	42046	TAB	X	NR	30m	D	D	D	D	D	D				D					All data bad			
Y	42045	TAB	--	Release	30m	D			D	D	D				D					No data reports BARO failed WINDS failed Intermittent data WTMP failed	Erratically reports 0 WSPDS stuck on 0 WTMP too low	02/07/07 02/06/07 02/04/07 04/04/07 4/7/05	Y Y N Y Y TJB RB2 RB2 RB2 RB1
Y	42044	TAB	i	Release																Ocean current data only	Ocean data missing aft 05z	02/24/07	TJB
Y	42043	TAB	i	Release	30m	D	D								D					Intermittent data reports DEWPT/ATMP failed WTMP failed	Both reading less than -35C WTMP too low	02/26/07 02/22/07 03/05/03	IS Y TJB RB1
Y	42048	TAB	i	Release																Ocean current data only Use Webcheck to verify			
Y	42049	TAB	i	Release																Ocean current data only	Ocean data missing aft 03z	02/24/07	TJB
Y	42050	TAB	--	Release																no data reports Ocean current data only		02/18/07	RB2
N	42051	TAB																		Planned Station			
Y	CAPL1	NOS		Release	6m										m								
Y	SBPT2	NOS		Release																			
Y	GNJT2	NOS	i	Release	6m															Intermittent data		02/26/07	Y IS
Y	GPST2	NOS		Release	6m																		
Y	GTOT2	NOS		Release	6m																		
Y	EPTT2	NOS	i	Release	6m															Intermittent data		02/27/07	Y IS
Y	MGPT2	NOS		Release	6m										D					WTMP failed	Data spikes	12/03/06	RB2



NDBC HF Radar Page

National Data Buoys Center - Mozilla Firefox

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http://hfradar.ndbc.noaa.gov/

National Oceanic and Atmospheric Administration's
National Data Buoys Center
 Center of Excellence in Marine Technology

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WARNING: HF Radar data have not been quality controlled.

This is a demonstration of the **NOAA HF Radar National Server and Architecture Project**. HF Radar is used to remotely measure ocean surface currents. Click a region on the map below to go directly to that HF Radar region or [view HF Radar data for the U.S.](#)



For more information about this demonstration, see the [HF Radar Product Description Document \(PDD\)](#).

Your feedback is requested. Please [fill out the survey](#) related to this demonstration.

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[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
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Page last modified: January 31, 2007

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NOAA HF Radar Server - Mozilla Firefox

http://hfradar.ndbc.noaa.gov/hfradar.php?region=Texas

National Oceanic and Atmospheric Administration's
National Data Buoys Center
 Center of Excellence in Marine Technology

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Location Preferences View Help

March 1, 2007 11:00 UTC

Lat: 29 04.16 N
 Lon: 94 13.40 W

Lat: 29 04.18 N
 Lon: 94 13.30 W

Speed: 16.3 cm/s
 Dir: 267.2°

10:00 12:00

31 11:00

0 20 40 60 80 100 cm/s

U.S. Dept. of Commerce
 National Oceanic and Atmospheric Administration
 National Weather Service

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NDBC DART Page



NDBC - Station 42408 - Mozilla Firefox

http://www.ndbc.noaa.gov/station_page.php?station=42408

Station ID Search

Station List

Observations
Recent
Historical
Obs Search
NOAA Obs
APEX
CSP
DART
MMS ADCP
TAO
DODS
HF Radar
OSMC

Station Status
Maintenance
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Station 42408 - 310 NM South-Southeast of New Orleans, LA

Owned and maintained by National Data Buoy Center
2.5-meter discus buoy
DART II payload
25.409 N 86.800 W (25°24'32" N 86°48'00" W)

[Important Notice to Mariners](#)
[Meteorological Observations from Nearby Stations and Ships](#)
[Latest Satellite Wind Map for this Area](#)
[DART Program Description](#)

Water Column Height at 42408

Data Access

Select Data Type:

Available series:

Select start date:
Year: Month: Day:

Select end date:
Year: Month: Day:

Water Column Heights:
02/25/2007 00:00:00 to 03/01/2007 23:59:59

The data are recorded in pounds per square inch absolute (PSIA), but are displayed in me applying a constant 670.0 mm of water/PSIA conversion factor.

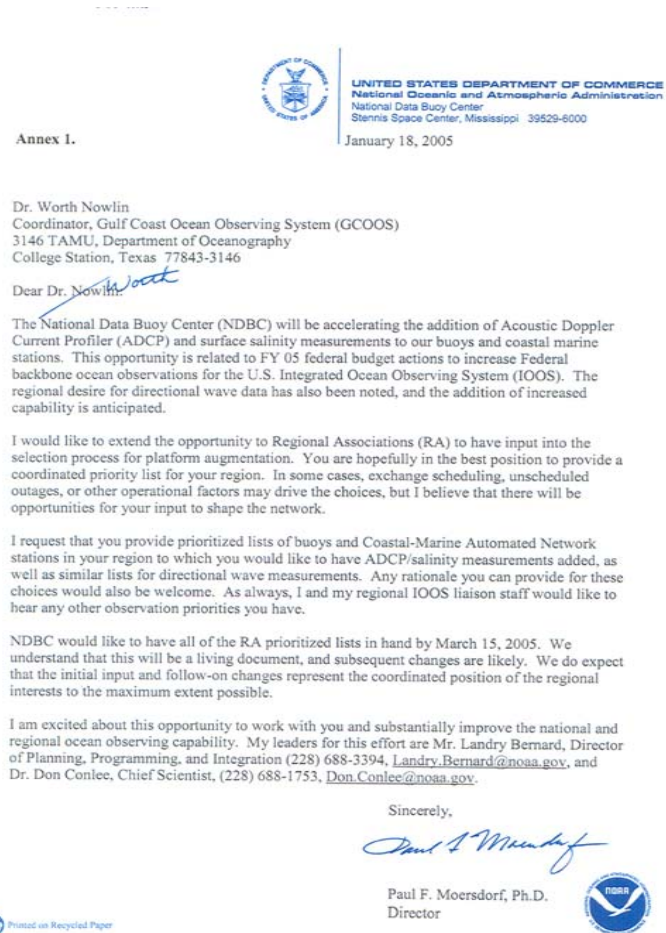
YYYY	MM	DD	hh	mm	ss	T	HEIGHT (meters)
2007	03	01	18	00	00	1	3259.959
2007	03	01	17	45	00	1	3259.955
2007	03	01	17	30	00	1	3259.951
2007	03	01	17	15	00	1	3259.946
2007	03	01	17	00	00	1	3259.943



Request for Regional Inputs



- Due to FY05 budget, we were able to add some Salinity, ADCP and Directional Wave sensors to existing buoys.
- What are your priorities?
- What else do you want to tell us?
- Coordinated Response desired.





SCCOOS (So. Cal.): Salinity and ADCP

- 46023 (Pt. Arguello) or 46011 (Santa Maria)
- **46063 (Pt. Conception)** or 46054 (Santa Barbara)
- **46053 (Santa Barbara E.)**
- 46025 (Santa Monica Basin)
- 46069 (South Santa Rosa Island)
- **46086 (San Clemente Basin)**





SCCOOS: Other

- Waves input covered by Waves Observation Coordination Workshop
- Expressed concern with Angular Rate Sensor accuracy for wave model use. Encouraged thorough evaluation before widespread deployment.
- Reiterated importance of maintaining former MMS sponsored buoys 46054 (Santa Barbara) and 46023 (Pt. Arguello) 46063 (Pt. Conception)
- Stressed importance of subsurface CT measurement, and hinted that mooring design should be changed to accommodate.



CENCOOS:

(Central and Northern California)

Directional Waves

- Priority Order
 - **46028 (Cape St. Martin)**
 - 46014 Pt. Arena
 - **46011 Santa Maria**
 - **46042 Monterey Bay**





CENCOOS: ADCP/Salinity

- Priority Order
 - 46013 Bodega Bay
 - **46011 Santa Maria**
 - 46028 Cape St. Martin
 - 46014 Pt. Arena



CENCOOS: Other

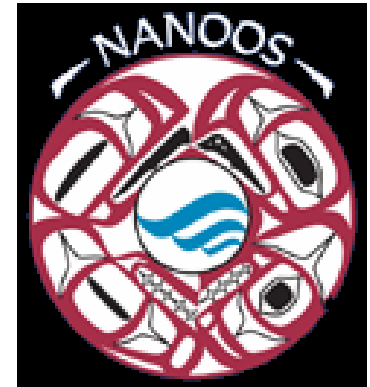
- Also add CO2, Nitrates, Radiometers, Fluorescence, Backscatter
- Echosounder for biomass in S.F. Bay and Bodega Bay
- *Increase total buoys to 15 in region (+ 5)*
- Make MODEM process easier
- Explore lower cost systems
- QA/QC for ocean sensors
- Tone



NANOOS (Pacific Northwest): Directional Waves

- **Priority Order**

- 1: 46029 (Continue) (Columbia River Bar)
- 2: 46050 (Stonewall Banks)
- 3: 46015 (Port Orford)
- 4: 46041 (Cape Elizabeth)
- 5: **46087 (Neah Bay “JA”)** (Note: Has DW, USCG)
- 6: **46088 (Hein Bank, New Dungeness)** (Note: DW, USCG)



- **Other Comments**

- Puget Sound waves obs needed.
- Need new mid-shelf buoy S. of Heceta Bank
- Dir. Wave on everything!



NANOOS: ADCP/Salinty

- **Priority Order**

- 1: 46029 (Columbia River Bar)
- 2: 46087 (Neah Bay “JA”) (Note: USCG)
- 3: 46050 (Stonewall Banks)
- 4: 46015 (Port Orford)
- 5: 46088 (Hein Bank, New Dungeness) (Note: DW, USCG)
- 6: 46041 (Cape Elizabeth)



NANOOS: Other

- **New Buoys Needed (“At least double”)**
 - **Heceta Bank (Mid-Shelf) most critical need**
 - **Interior Strait of Juan de Fuca (water quality)**
 - **Currents and winds Washington Shelf (oil spill)**
 - **Puget Sound (local wave models)**
 - **Also:**
 - **Boundary Pass**
 - **Juan de Fuca Eddy**
 - **Astoria Canyon**
 - **Yaquina Bay**
 - **Coos Bay (has CDIP wave buoy)**
 - **New Parameters needed: DO, Chlorophyll**



Summary

- **There are more opportunities for both NDBC and PaCOOS.**
- **NDBC is striving to implement the requests from the Regional Associations.**
- **Thanks for your input!**