The Data Assembly Center (DAC) at the National Data Buoy Center (NDBC)

William Burnett, PhD

NOAA NWS National Data Buoy Center

Stennis Space Center, MS

Presented to DBCP XXIII

16 October 2007

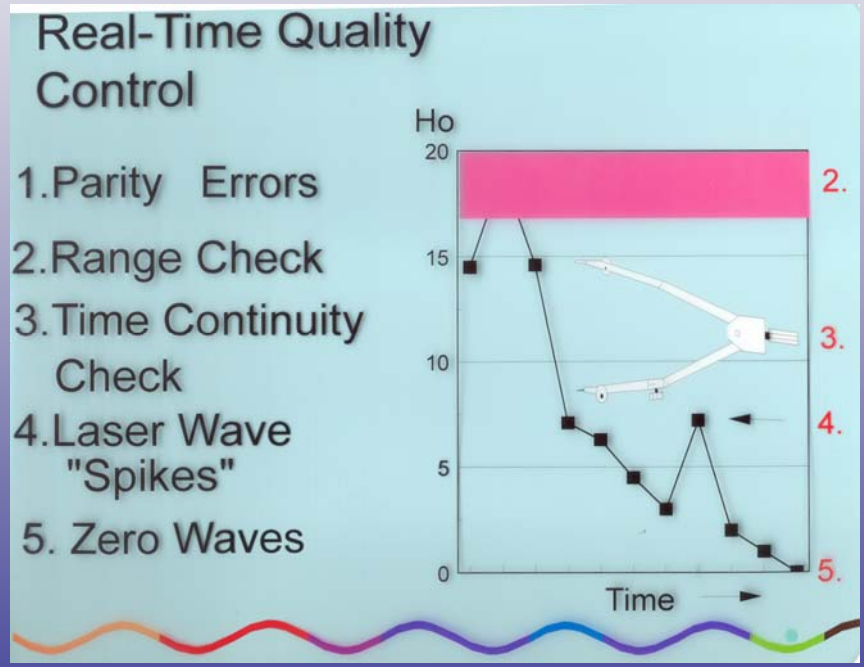
Bill.Burnett@noaa.gov

Overview

- Data Assembly Center
  - History
  - Functions
- Process
- Data Users
- Data Resources
- DAC – Partner Interactions
- Follow-on Efforts

Data Assembly Center

- Before there was a Data Assembly Center (DAC), the Data Quality Analysis Group was formed
  - Started 30 years ago
  - Meteorologists quality controlled the data from NDBC “Yellow Buoys” and C-Man stations
  - Quality control was provided on a “daily” basis
  - In the 1990’s automated quality control was established
  - Approximately 100 stations



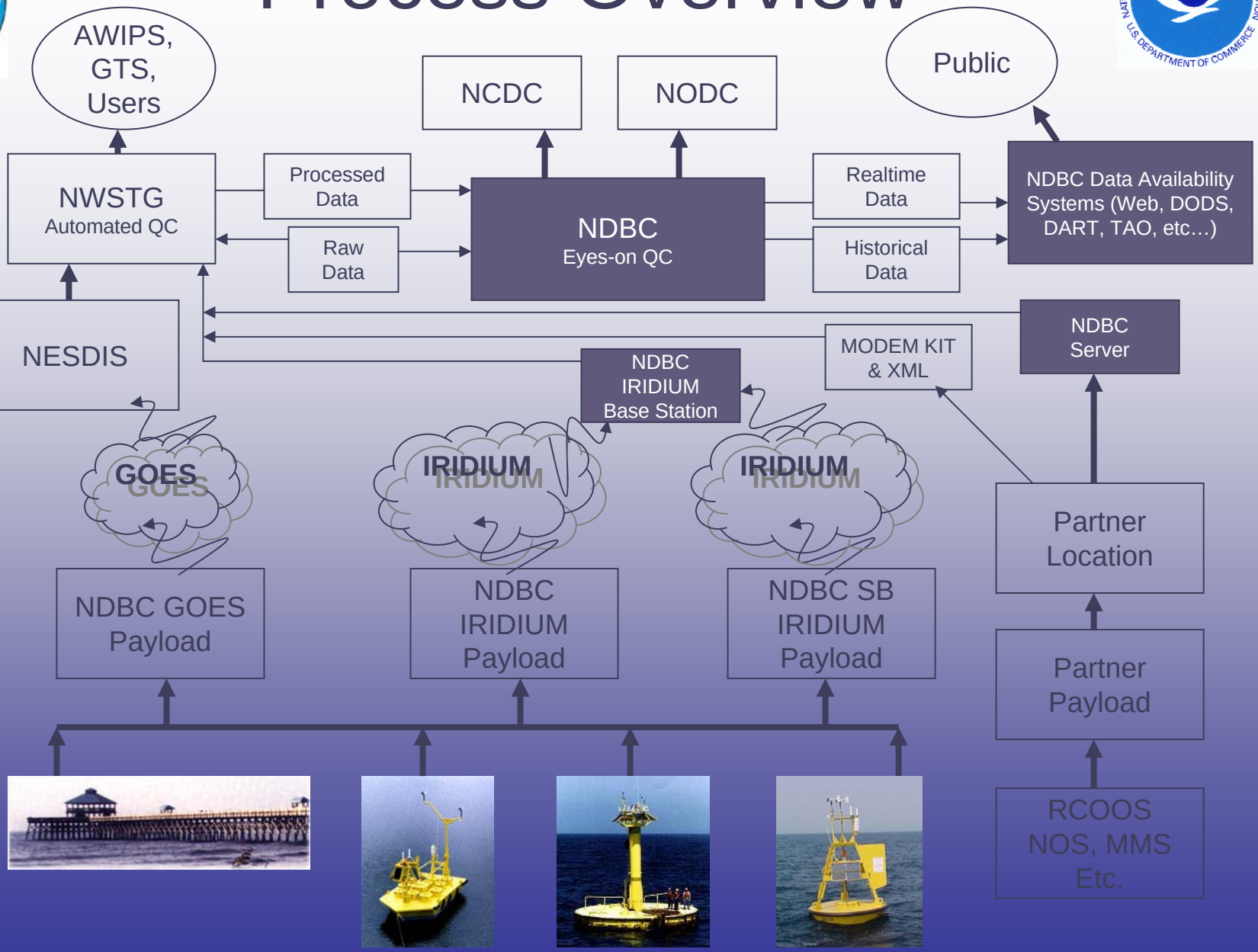
Data Assembly Center

- Instituted the Data Assembly Center (DAC) 1 July 2005
- Real-time, automated quality control at the Telecommunications Gateway
  - As data arrive; before they are transmitted as bulletins
- Daily “eyes on” quality control for data that exceed “soft” limits
- Monthly quality control of NDBC files as they are accumulated for storage in the historical database

Additional DAC Functions

- Maintaining platform metadata in a data base for proper processing and archival
- Reporting communications outages that impact data quality or the ability to deliver data
- Reporting station failures to the data provider
- Reporting degraded data and contacting provider to stop/correct degraded data

Process Overview



National Data Buoy Center

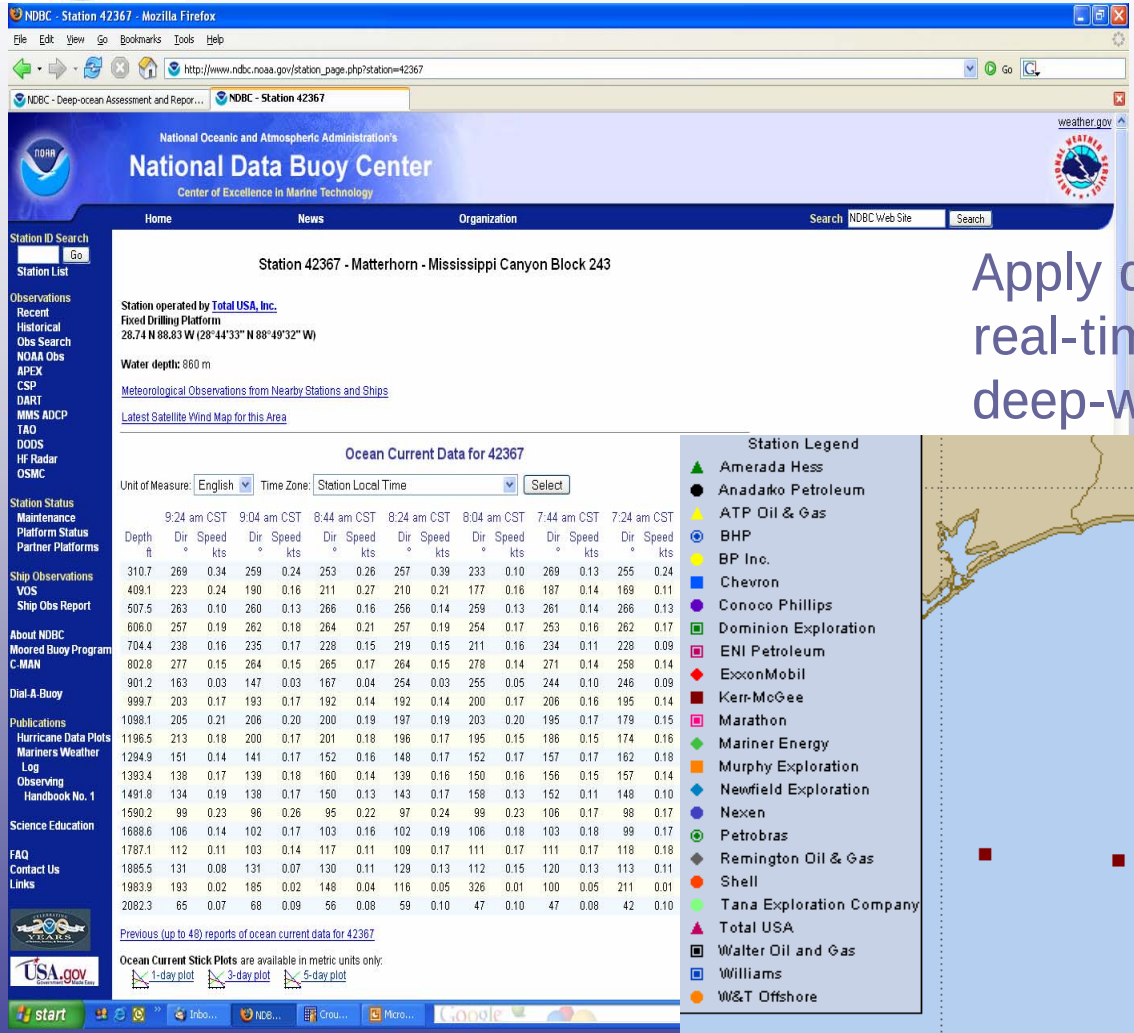
Who Uses It

- Forty-three (43) coastal NWS Forecast Offices and U.S. Navy for marine warnings and forecasts (high winds and seas, surf, currents, etc.).
- Two (2) NWS Tsunami Warning Centers
- NOAA Center for Tsunami Research
- National Ocean Service – Center for Operational Oceanographic Products and Services
- Coast Guard for search and rescue missions.
- National atmospheric and/or ocean prediction centers.
- State and local decision makers; hazard and spill responders
- Fishing industry, marine transportation; cruise lines; oil and gas industry.
- Our active reimbursable partners
  - National Marine Sanctuary Program
  - Sea Launch Corp., LLC – Pacific equatorial waves
  - St. Lawrence Seaway Development Corporation – Fog
  - Army Corps of Engineers – Measure directional waves
  - Coast Guard meteorological observations and navigation aids
  - Michigan Dept. of Environmental Quality – Lake St. Clair circulation
  - NASA Kennedy Space Center and Goddard Space Flight Center
- Academic researchers
- Satellite sensor calibration and validation

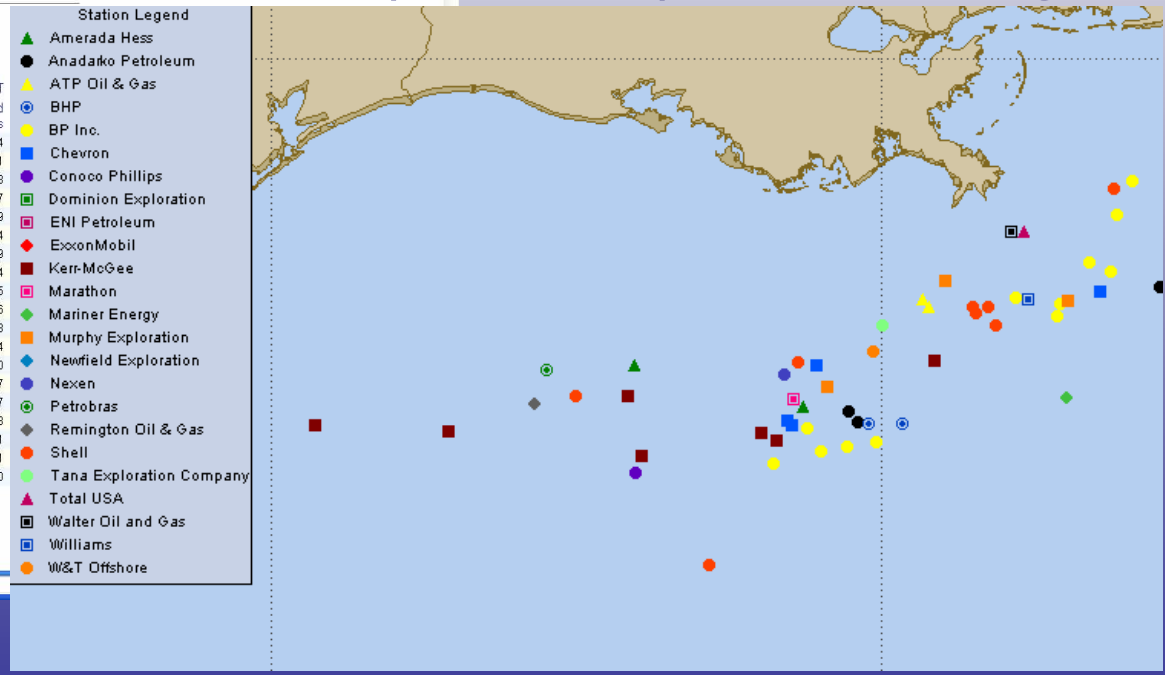
NDBC DAC: An IOOS Data Assembly Center

- 24/7/365 support of
  - Data Quality Control
  - Communications
  - Operations
- Daily Operations Brief
- More than 600 stations currently supported
  - NDBC Buoys (104)
  - NDBC C-MAN Stations (56)
  - NOS Stations (161)
  - DART (34)
  - TAO (55)
  - VOS (400+)
  - Partner Stations (180)

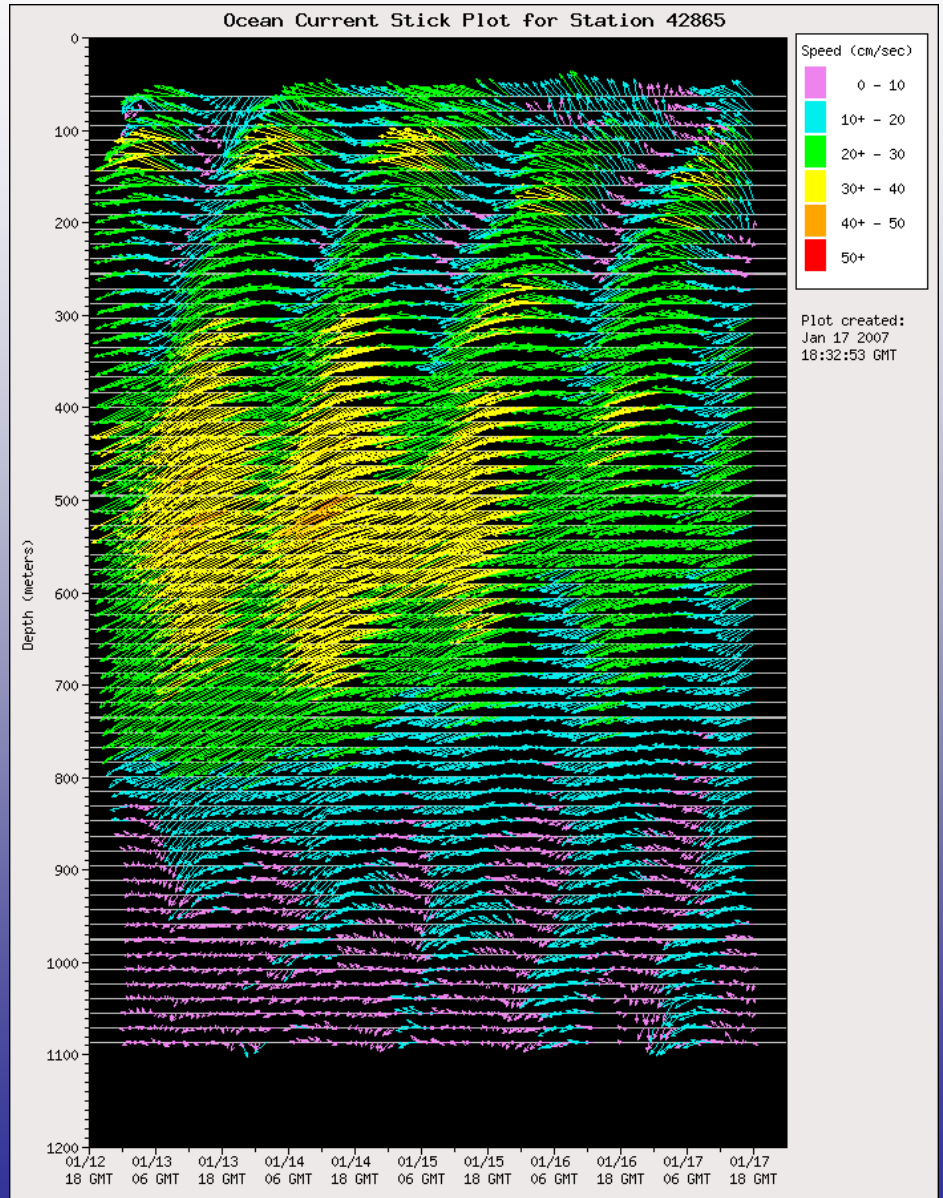
NDBC MMS Page



Apply quality control to real-time ADCP data from 40-50 deep-water oil platforms and rigs



Real-Time MMS ADCP Data



NDBC HF Radar Page

National Data Buoy Center - Mozilla Firefox

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

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

weather.gov

Home | News | Organization | Search NDBC Web Site | Search

Station ID Search | Go
Station List
Observations
Recent
Historical
Obs Search
NOAA Obs
APEX
CSP
DART
MMS ADCP
TAO
DODS
HF Radar
OSMC

Station Status
Maintenance
Platform Status
Partner Platforms

Ship Observations
VOS
Ship Obs Report

About NDBC
Moored Buoy Program
C-MAN

Dial-A-Buoy

Publications
Hurricane Data Plots
Mariners Weather Log
Observing Handbook No. 1

Science Education

FAQ
Contact Us
Links

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.

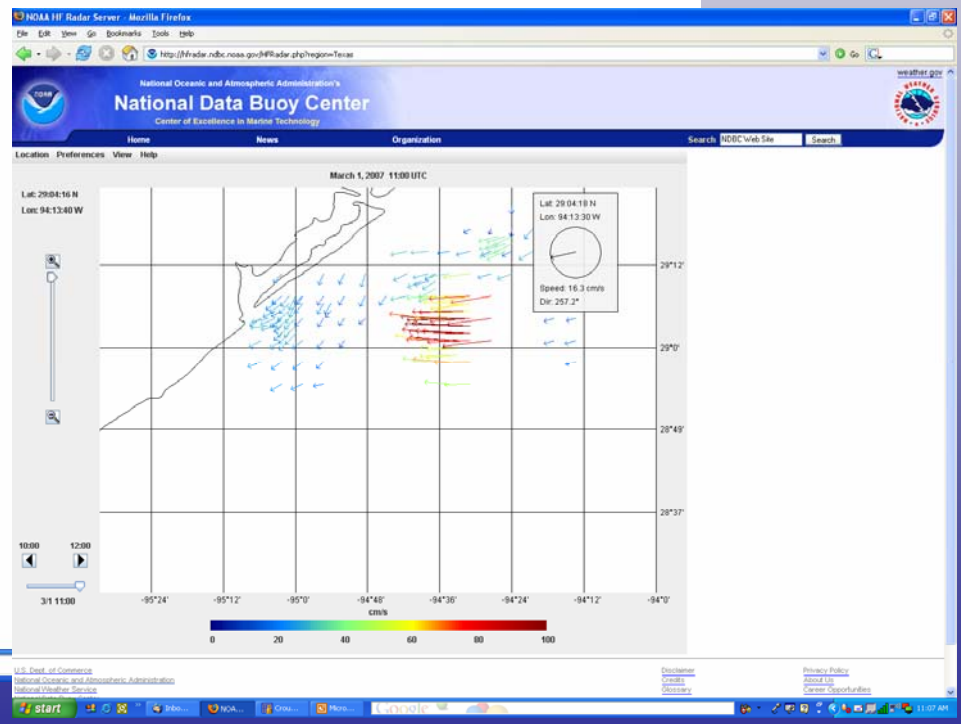
For more information about this demonstration, see the HF Radar Product Description Document (PDD).

Your feedback is requested. Please fill out the survey related to this demonstration.

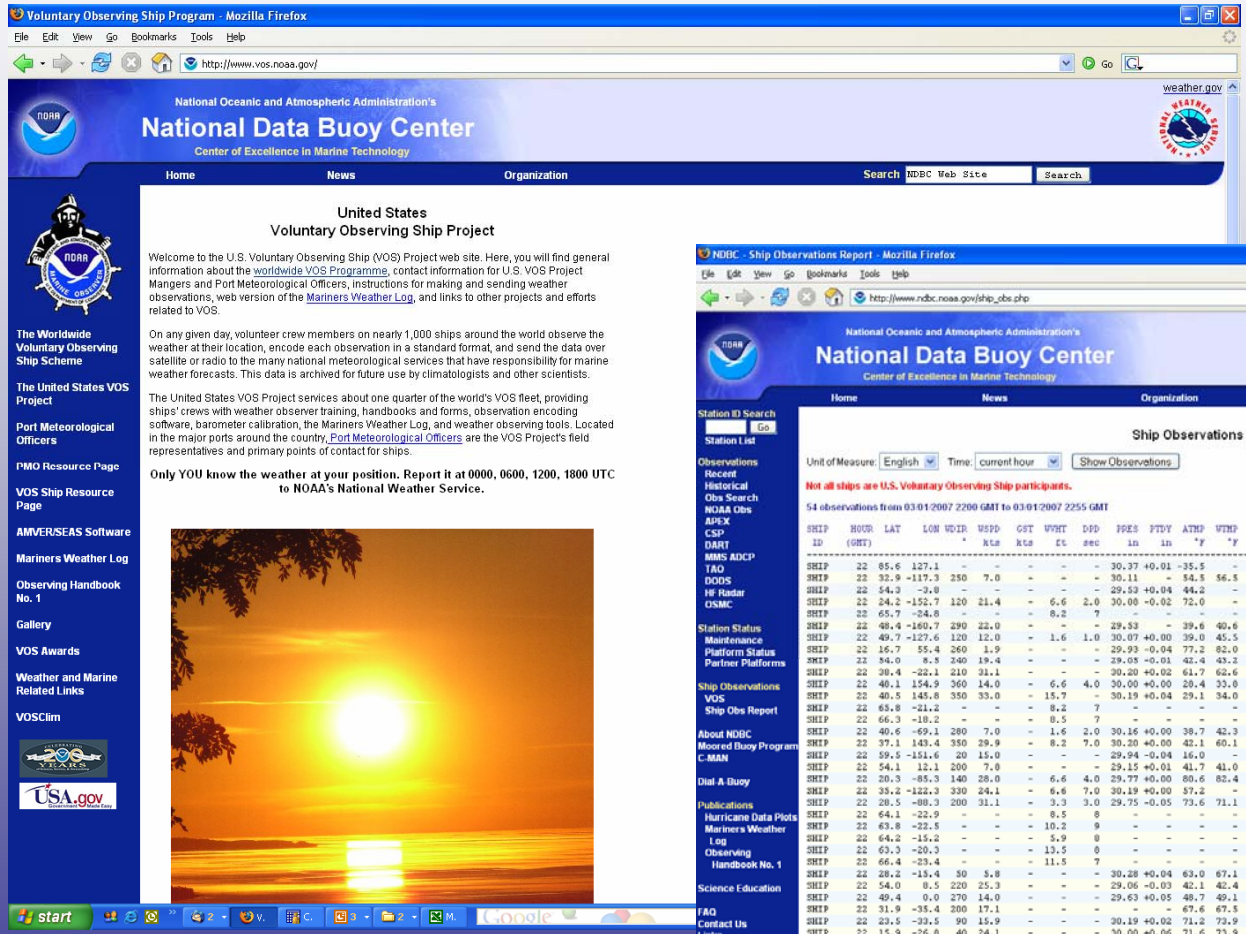
U.S. Dept. of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Data Buoy Center
1100 Balch Blvd.
Stennis Space Center, MS 39529
Feedback
Page last modified: January 31, 2007

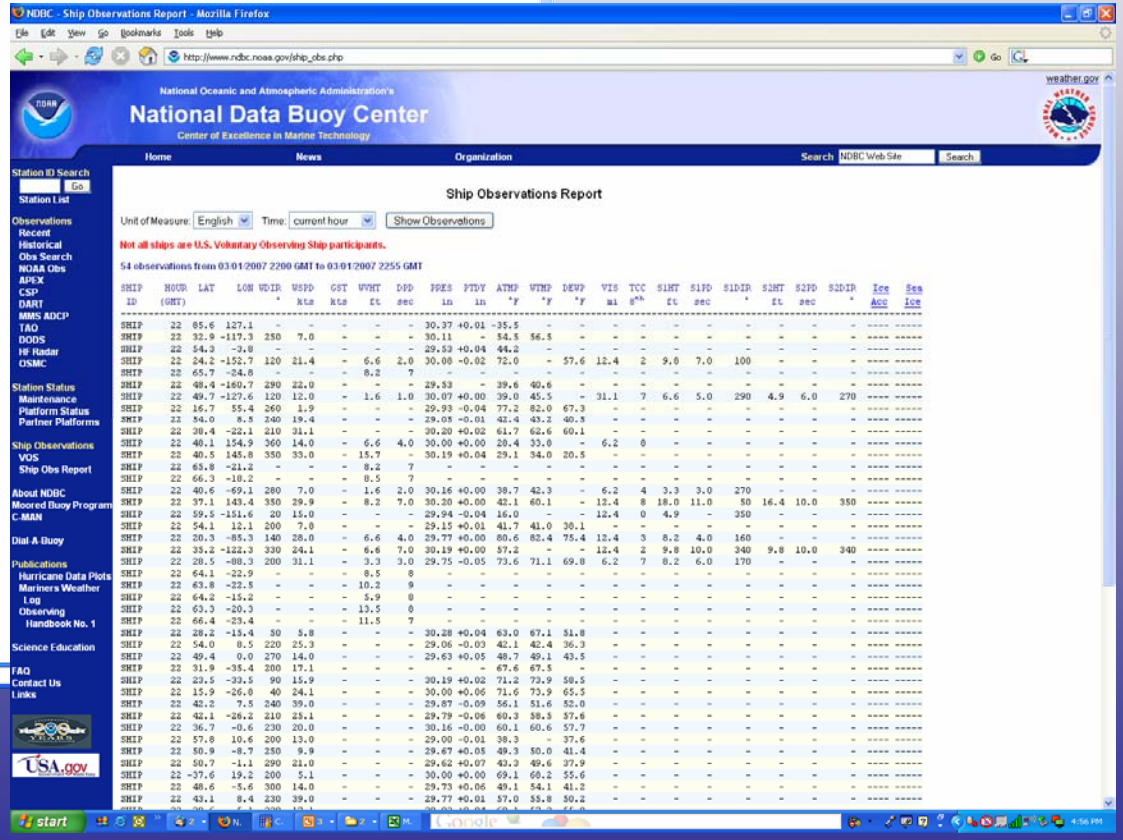
Disclaimer | Credits | Glossary | Privacy Policy | About Us | Career Opportunities

NDBC became an HF Radar Node 28 February 2007. NDBC receives HF Radar radials from all HF radar sites and generates vectors.



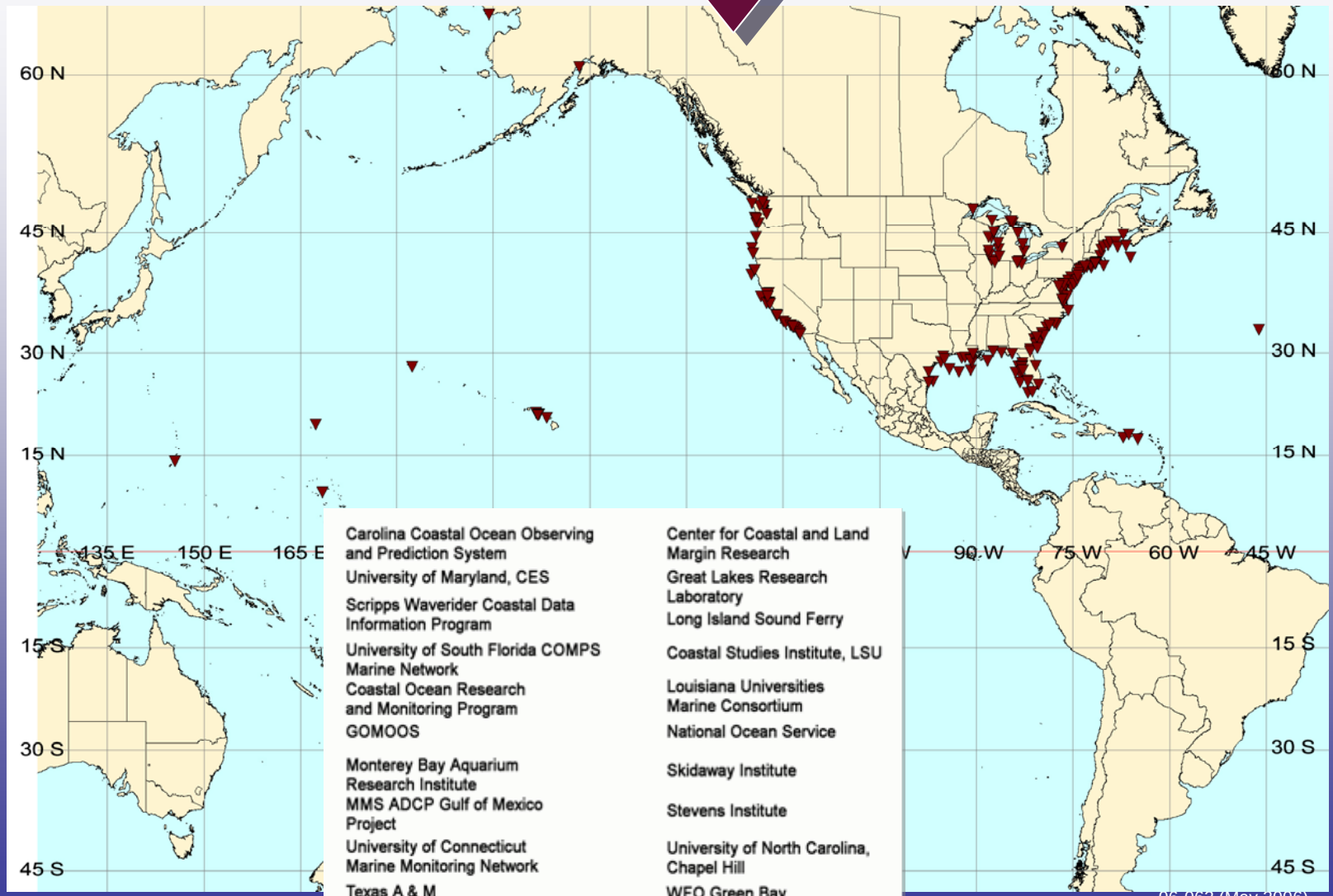
NDBC VOS Page



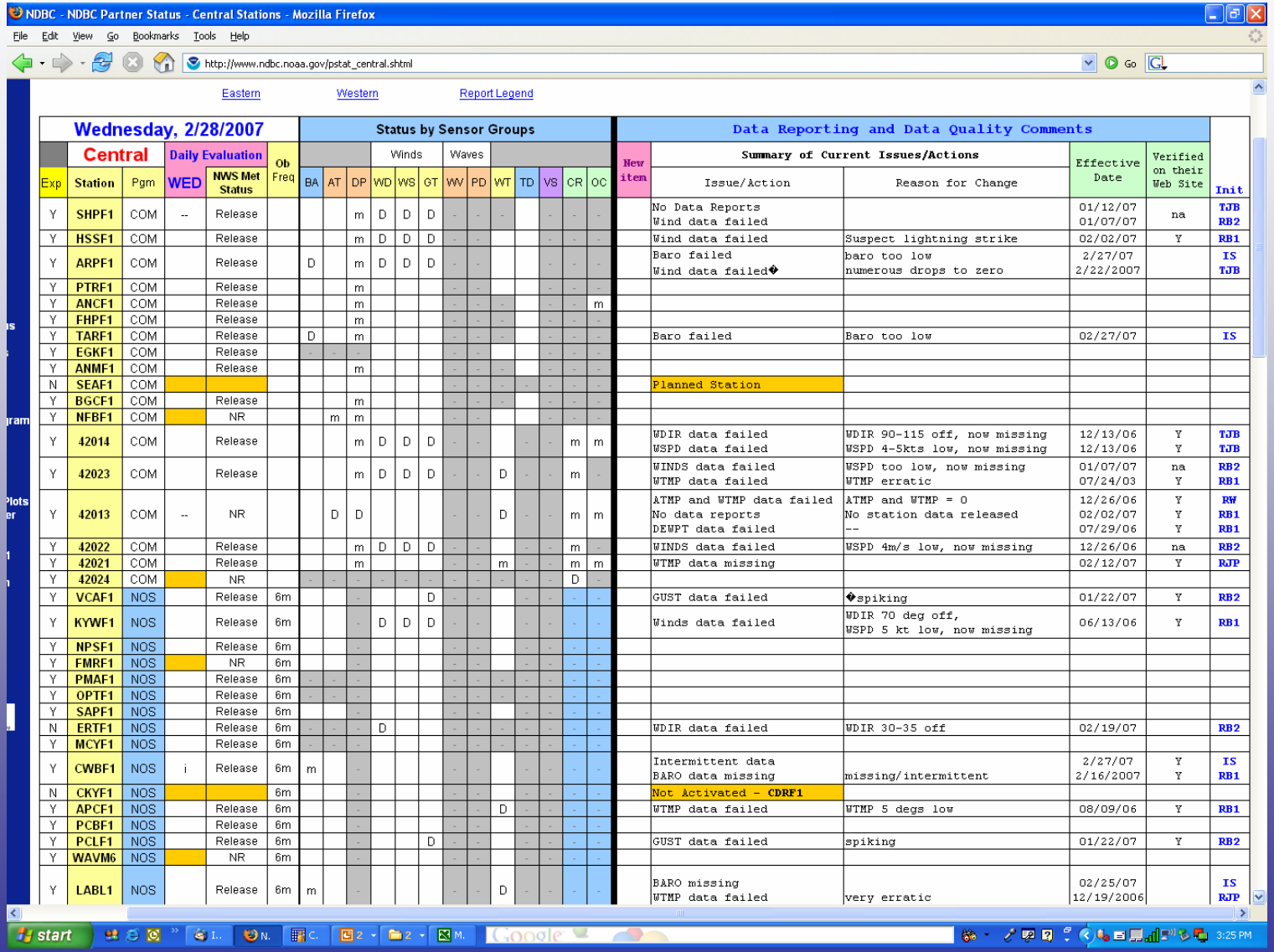


Data from more than 400 Volunteer Observing Ships

Partner Stations



Partner Platform Status



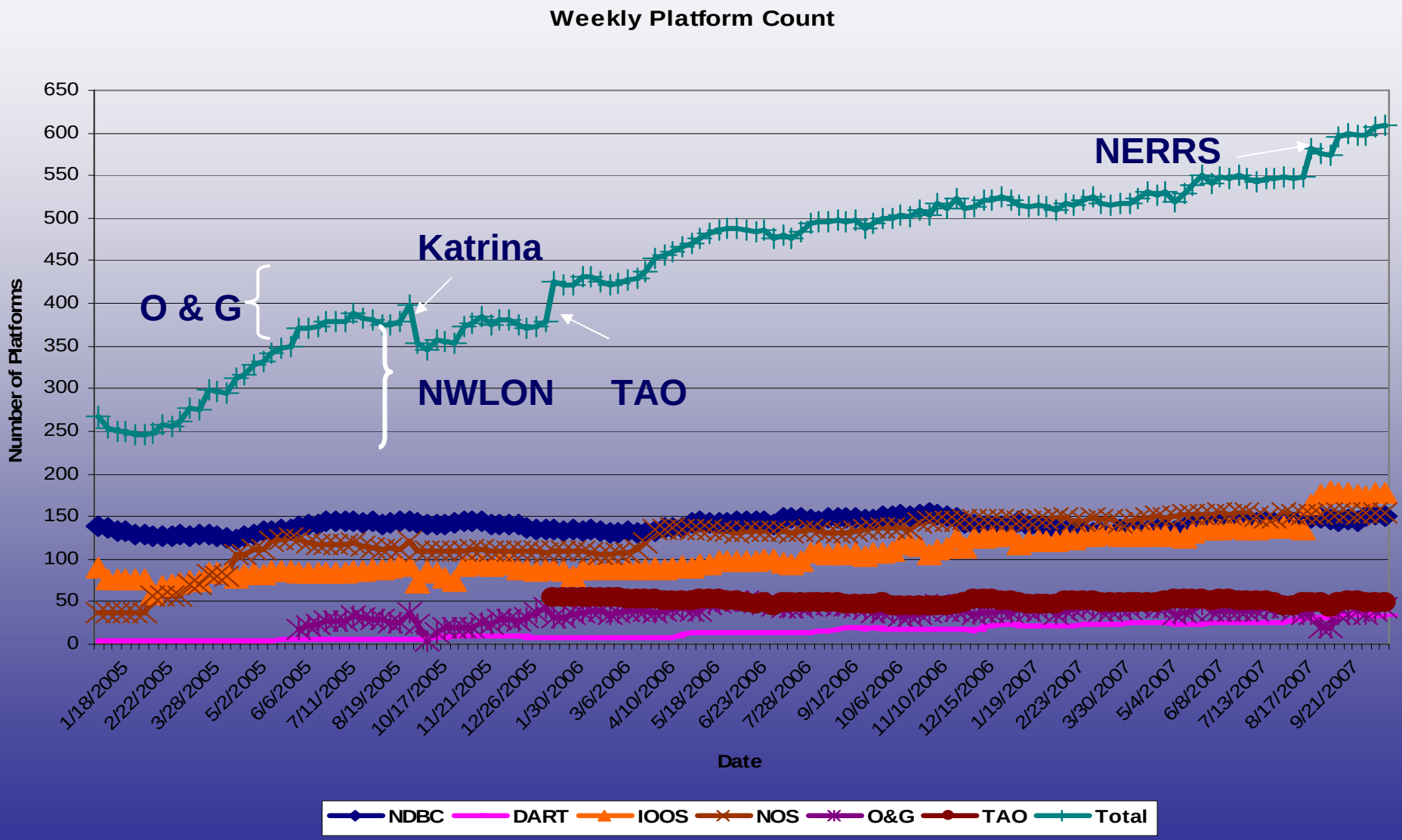
Wednesday, 2/28/2007

Central — Daily Evaluation

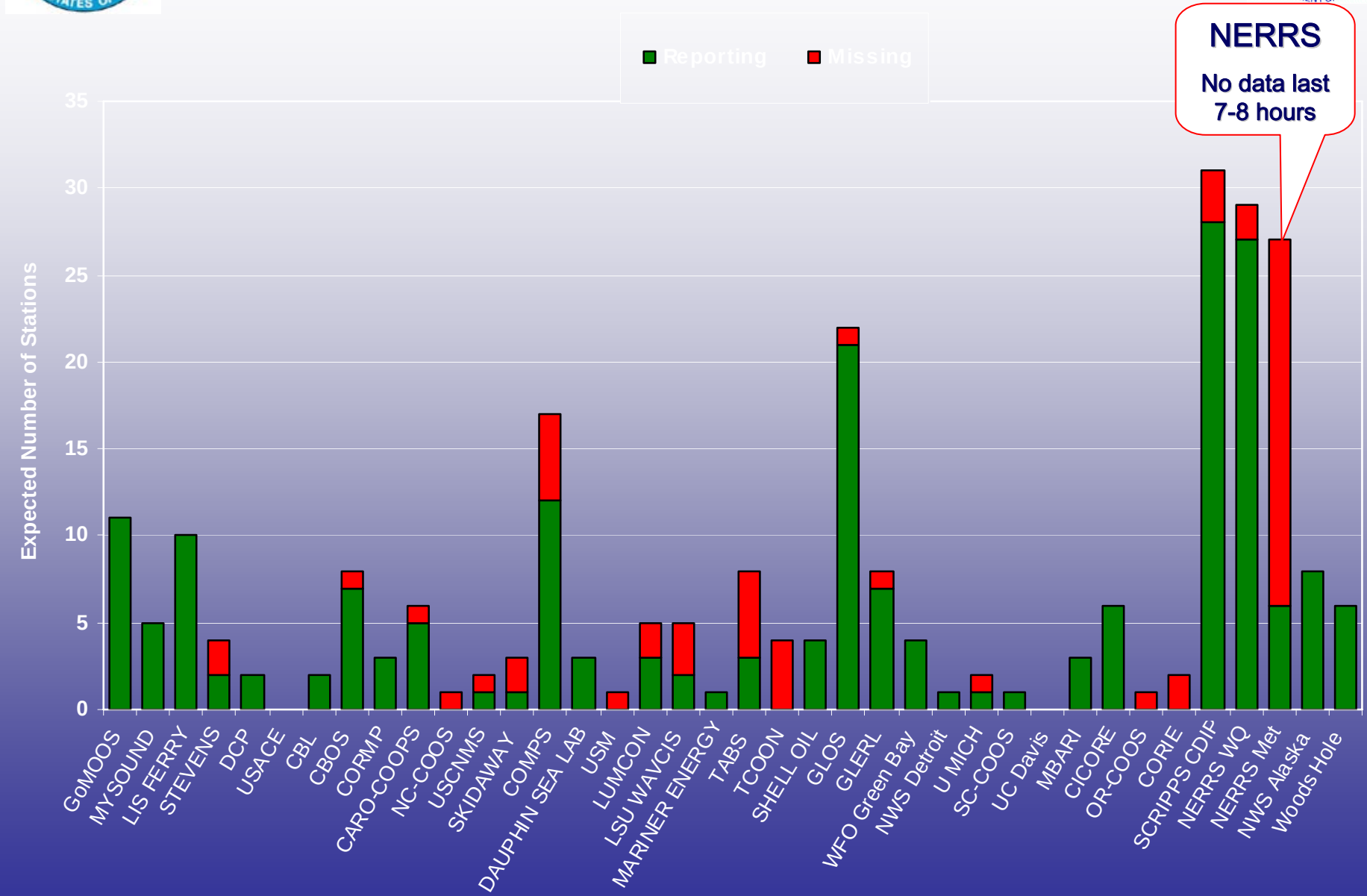
Exp	Station	Pgm	WED	NWS Met Status	Ob Freq	Status by Sensor Groups: BA	AT	DP	Winds: WD	WS	GT	Waves: WV	PD	WT	TD	VS	CR	OC	New item	Summary of Current Issues/Actions: Issue/Action	Reason for Change	Effective Date	Verified on their Web Site	Init
Y	SHPF1	COM	--	Release				m	D	D	D	-	-	-		-	-	-		No Data Reports Wind data failed		01/12/07 01/07/07	na	TJB RB2
Y	HSSF1	COM		Release				m	D	D	D	-	-			-	-	-		Wind data failed	Suspect lightning strike	02/02/07	Y	RB1
Y	ARPF1	COM		Release		D		m	D	D	D	-	-			-	-	-		Baro failed Wind data failed	baro too low numerous drops to zero	2/27/07 2/22/2007		IS TJB
Y	PTRF1	COM		Release				m				-	-			-	-	-						
Y	ANCF1	COM		Release				m				-	-	-		-	-	m						
Y	FHPF1	COM		Release				m				-	-	-		-	-	-						
Y	TARF1	COM		Release		D		m				-	-	-		-	-	-		Baro failed	Baro too low	02/27/07		IS
Y	EGKF1	COM		Release		-	-	-				-	-			-	-	-						
Y	ANMF1	COM		Release				m				-	-	-		-	-	-						
N	SEAF1	COM										-	-	-	-	-	-	-		Planned Station				
Y	BGCF1	COM		Release				m				-	-	-		-	-	-						
Y	NFBF1	COM		NR			m	m				-	-			-	-	-						
Y	42014	COM		Release				m	D	D	D	-	-		-	-	m	m		WDIR data failed WSPD data failed	WDIR 90-115 off, now missing WSPD 4-5kts low, now missing	12/13/06 12/13/06	Y Y	TJB TJB
Y	42023	COM		Release				m	D	D	D	-	-	D	-	-	m	-		WINDS data failed WTMP data failed	WSPD too low, now missing WTMP erratic	01/07/07 07/24/03	na Y	RB2 RB1
Y	42013	COM	--	NR			D	D				-	-	D	-	-	m	m		ATMP and WTMP data failed No data reports DEWPT data failed	ATMP and WTMP = 0 No station data released --	12/26/06 02/02/07 07/29/06	Y Y Y	RW RB1 RB1
Y	42022	COM		Release				m	D	D	D	-	-		-	-	m	-		WINDS data failed	WSPD 4m/s low, now missing	12/26/06	na	RB2
Y	42021	COM		Release				m				-	-	m	-	-	m	m		WTMP data missing		02/12/07	Y	RJP
Y	42024	COM		NR		-	-	-	-	-	-	-	-	-	-	-	D	-						
Y	VCAF1	NOS		Release	6m			-			D	-	-		-	-	-	-		GUST data failed	spiking	01/22/07	Y	RB2
Y	KYWF1	NOS		Release	6m			-	D	D	D	-	-		-	-	-	-		Winds data failed	WDIR 70 deg off, WSPD 5 kt low, now missing	06/13/06	Y	RB1
Y	NPSF1	NOS		Release	6m			-				-	-		-	-	-	-						
Y	FMRF1	NOS		NR	6m			-				-	-		-	-	-	-						
Y	PMAF1	NOS		Release	6m	-	-	-				-	-		-	-	-	-						
Y	OPTF1	NOS		Release	6m	-	-	-				-	-		-	-	-	-						
Y	SAPF1	NOS		Release	6m			-				-	-		-	-	-	-						
N	ERTF1	NOS		Release	6m	-	-	-	D			-	-	-	-	-	-	-		WDIR data failed	WDIR 30-35 off	02/19/07		RB2
Y	MCYF1	NOS		Release	6m	-	-	-				-	-		-	-	-	-						
Y	CWBF1	NOS	i	Release	6m	m		-				-	-		-	-	-	-		Intermittent data BARO data missing	missing/intermittent	2/27/07 2/16/2007	Y Y	IS RB1
N	CKYF1	NOS			6m			-				-	-		-	-	-	-		Not Activated - CDRF1				
Y	APCF1	NOS		Release	6m			-				-	-	D	-	-	-	-		WTMP data failed	WTMP 5 degs low	08/09/06	Y	RB1
Y	PCBF1	NOS		Release	6m			-				-	-		-	-	-	-						
Y	PCLF1	NOS		Release	6m			-			D	-	-		-	-	-	-		GUST data failed	spiking	01/22/07	Y	RB2
Y	WAVM6	NOS		NR	6m			-				-	-		-	-	-	-						
Y	LABL1	NOS		Release	6m	m		-				-	-	D	-	-	-	-		BARO missing WTMP data failed	very erratic	02/25/07 12/19/2006		IS RJP

Data Reporting and Data Quality Comments

Number of Stations Reporting



Number of IOOS Partner Stations Reporting



Percentage of Stations Reporting

Follow-on Efforts

- Adapt strategy to higher frequency (and battery powered) current profilers and all current profiler data processed by NDBC
  - Large surface current and current profiler expansion underway at NDBC
- Time continuity and other processing dependent on previous reports
- Spatial Checks
- Model Comparisons (In-House only)
- Training of NDBC DAC Staff on Data Management Console for QA/QC
  - Future quality control algorithms being sought
- QARTOD/COTS Demonstration Compliant

Questions?

Contact Info:
William Burnett, Ph.D.
Data Management and Communications Branch Chief
National Data Buoy Center
Stennis Space Center, MS 39529
Bill Burnett@noaa.gov
228-688-4766